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WAYS AND MEANS
OF WAR

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WAYS AND MEANS OF WAR

BY

GEOFFREY CROWTHER

Editor of *The Economist*

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'For War is quite changed from what it was in the days of our Fore-fathers; when in a hasty Expedition and a pitch'd field, the Matter was decided by Courage; but now the whole Art of War is in a manner reduced to Money; and now adays that Prince, who can best find Money to feed, cloath and pay his Army, not he that hath the most valiant Troops, is surest of Success and Conquest.'

CHARLES D'AVENANT.

Essay on Ways and Means of Supplying the War, 1695.

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PREFACE

THIS little book has grown out of two pamphlets that I contributed to the series of 'Oxford Pamphlets on World Affairs'. The first of these, called *The Sinews of War*, dealt, in the main, with the questions of man-power and raw material supply. The second, called *Paying for the War*, was confined to the financial problem.

The publishers suggested that a useful purpose might be served if the subject-matter of the two pamphlets, together with chapters on other economic aspects of the war, could be made into a short book. Here it is. *The Sinews of War* covers the same ground (though not in exactly the same way) as parts of Chapters I, II, IV, and V. Chapters IX and X are, in many places, merely a reprint of *Paying for the War*. I hope nobody who reads the book after having read the pamphlets will feel cheated when he discovers the same truths in both. The book has had to be written very quickly and I dare not hope that there are no mistakes of fact in it. In advance, I apologize for any that may be discovered.

The book was already in its final proof when the collapse of France altered some of the assumptions on which it was written. I have made such adjustments as are possible and Chapters II and IV have been substantially rewritten, but it is only right to confess that the structure of the book might have been different if it had been begun now. But though the precise circumstances of the economic war have been altered, the principles by which it must be fought have not and my main arguments can stand without amendment. Moreover, if France has now to be deducted from the Allies' side of the balance, more and more of the economic weight of the United States is being thrown into the same scale. All the same, the economic war cannot be won if the military war is lost, and though this book is exclusively concerned with the economic war, one of the conditions precedent to being able to wage it is that (to quote *The Sinews of War*) 'we must prevent the enemy from overrunning our industrial areas or bombing them out of existence before they convert our advantages of man-power and material-power into an actual military superiority'.

It is hardly necessary to say that this book is not a piece of original research for the specialist, but an attempt to make matters clear for the ordinary citizen. I hope that it has been written in such a way that he can understand it. I am sure enough of my democratic faith to know that if only we can understand what war requires of us we are capable of cheerfully and freely assuming any of the burdens that dictators have to force upon their uncomprehending victims. If this book contributes in the slightest degree to that understanding, then one able-bodied but non-combatant civilian will be able to feel that he, too, has given labour and sacrificed leisure for the cause that we all share.

G. C.

June 1940

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I

THE ECONOMICS OF MODERN WAR

THE Battle of Waterloo, as every schoolboy knows, was won on the playing-fields of Eton. Even when he made his famous remark, the Duke of Wellington was doubtless conscious that he was exaggerating. But it is certainly true that war, in his day, was decided by the numbers and fighting qualities of the soldiers enrolled in the army and by the courage and skill of the generals who commanded them. True, the soldiers had to be equipped with muskets and a certain minimum of artillery, but the supplies were so small that it was still possible for armies to move across the map of Europe carrying almost all that they needed (except food) with them, and the numbers of men involved, though they seemed enormous at the time, were small by our standards. Great Britain fought and won the quarter-century of war with France without imposing conscription and with no financial effort greater than the first invention of a small income tax.

Every century has complained that war is becoming altogether too large-scale and expensive an undertaking. Every century, that is to say, has been aware of the economic burden of war. The quotation facing the preface comes from a pamphlet a hundred years before Napoleon. The object of d'Avenant's complaint was probably no more than the new-fangled notion that kings should pay their soldiers; and the cause that led William Pitt, a hundred years later, to invent the income tax was, in the main, the great increase in the number of soldiers who had to be paid and provided with scarlet tunics. Similarly, in the nineteenth century the chief cause of the growth in the cost of war was the enormous increase in the numbers involved. As the war-clouds that were to burst in 1914 gradually massed on the horizon, one continental country after another adopted the principle of universal conscription. Armies grew to be measured in millions, and when war broke out in 1914 the peoples of France, Germany, and Russia knew (even if those of Britain did not) that war would absorb every able-bodied man. Nevertheless, in spite of this, the increase in the cost of war between 1914 and 1918 was almost as great as in the whole of the preceding century. What was discovered in those four years is that modern war absorbs the whole of the economic and financial resources of the nation, non-combatants as well as the men actually put into uniform. It is not a business to be carried on by a section of the population, even by a large section; it requires the efforts of all.

War nowadays is an industrial proposition. It is more influenced by the science of economics than by the art of strategy. The present war will not be won on any playing-fields, at Eton or elsewhere, but in the mines and workshops of a thousand grimy industrial towns.

The pre-1914 organization of a gigantic military machine provided, it is true, for artillery and ammunition. An army had to have its arsenals, and if the army was millions strong the arsenals had to be gigantic. But the economic demands of a modern army were underestimated, and unprepared for, to a lamentable extent. The General Staffs, for one thing, miscalculated the numbers of weapons that would be required. For example, the machine-gun proved itself the most deadly of all the weapons of the Great War. But the Germans started the war with an allowance of only sixteen per battalion, and the British with only two per battalion. Moreover, in 1914 the tank was unborn and the aeroplane still in the cradle. The internal-combustion engine had hardly yet been applied to the business of killing. War stood only at the beginning of its Industrial Revolution, and the soldiers can perhaps be forgiven for not foreseeing how much weight of metal would stand behind each man by the time the war was four years old.

Having failed to foresee the amount of manufacture that would be required to carry on a war, the General Staffs naturally failed equally to grasp the importance of raw materials or the deadly effect of blockade. The Germans, as has already been pointed out, supplied their soldiers with more machines than the Allies at the beginning of the war. But when Walter Rathenau, one of Germany's leading industrialists, offered his services to the Imperial War Office in August

1914 to help with the task of organizing supplies of essential raw materials, he found that nothing had been prepared. Raw materials had not been recognized as a problem. Krupp's, it had been assumed, would have to take on more men and other steel firms might have to be pressed into service, but that was enough to look after the economic side of war.

The German generals did not have to live long to regret their mistake. The explanation of the 1918 defeat that is fashionable in Germany to-day is that an undefeated army was stabbed in the back by a traitorous crew of Socialists, Republicans, and Jews. But the theory is not true. The German Army was defeated in the field because its opponents had not only more men but, man for man, more guns, more shells, more tanks, more aircraft.

The war of 1914 was the first in which Great Powers from the start hurled into the fray all their man-power, recruited by universal service. The war of 1939 is the first in which the belligerents have realized from the start that it will require all their wealth and productive power.

That war is now fully totalitarian has become a cliché. But it is doubtful whether the full economic consequences have been drawn from the fact, or whether the shifts in the balance of power to which it gives rise have been fully appreciated. It is obvious that the importance in war of having a large and flourishing industry gives some countries a powerful advantage over others. The industrial nations have grown in power compared with agricultural countries. This fact has been most impressively demonstrated since the beginning of the war by the speed and apparent ease with which Germany crushed Poland. The Polish Army was not so much smaller than the German as to explain the rapidity of its collapse. It was defeated neither by superior numbers nor by greater bravery, but by tanks and aircraft —things that only an industrial nation can have in any large numbers. After the Polish campaign of 1939 we can safely say that there is not, as formerly, a steady gradation in military strength from large Powers to small, proportional to population. There is one group of military Powers—those that have strong metallurgical industries—and the rest stand on a distinctly lower plane of strength, as unarmed men facing artillery.

But this is not the only change in the balance of power produced by the new character of war. That new character does not consist merely in a wider use of industry; the essential nature of totalitarian war is that it uses the whole of a nation's industry and wealth. And this has produced a significant change in the use of man-power. In 1914 the theory of man-power was that every available man was sent into the army, leaving behind in the arsenals only just enough of the relatively old or disabled to supply the majority in the firing-line itself. It was not only in England that coal-miners and metal-workers were sent into the army in the early days. But by 1918 it had been discovered that every man in the front line needed more than one man in a munitions factory to supply him. The exact figure has been a subject of much debate, and it clearly depends on precisely how the 'front line' and the 'munitions factory' are defined. But if the front line means the combatant army and the munitions factory includes all those working directly or indirectly for the Government, the British figure in 1918 was something of the order of one to three. This process has gone farther since 1918; the volume of equipment of a British division to-day has been stated to be about double what it was at the end of the last war. If so, about five workers at least will be needed at home for every man in the fighting army. It is almost true to say that the 1939 theory of man-power is to put as many men as possible into the business of supply, leaving in the firing-line only as many men as are needed to drive, manipulate, and fire the weapons. It is almost the opposite of the 1914 theory.

Whether the men are put in the firing-line or in the factory, however, they are fully absorbed in catering for the unlimited appetite of war. The need for men is not less in the new form of war; it is much greater and it is supplemented by an unlimited demand for raw materials and for industrial plant. Where are these men, these materials, these machines to come from? One obvious source is from the resources that were standing idle before the war—the unemployed men and the under-employed machines.

Another obvious source is from harder work—overtime for men and using machines for sixteen or twenty-four hours a day instead of for eight. Both these are required in war-time, but they are not nearly enough. This war will require the full-time services of at least twelve million men and women in Great Britain. The unemployed at the outbreak of war—even supposing that every last man of them could be used—totalled only a million and a half. Overtime may add something more; but ten million men working one hour overtime each day is equivalent to only 1¼ million men working a forty-eight-hour week. Where are the rest to come from? There is only one possible source; they must be taken away from their normal task of providing food, clothes, shelter, warmth, travel, entertainment, and the thousand-and-one pleasant or desirable goods or services that go to make up the peace-time standard of living. In order that they may be released, the population will, for the duration, have to cut down its consumption. Moreover, this shift of men, materials, and machines from peace to war uses is not one to which limits can be set. To win the war, we must devote more resources to it than the enemy, and since he will devote as many as he can, we too must put every man and every machine that can possibly be spared to the purposes of war. To make this possible, we must restrict our consumption to the minimum.

A war economy thus differs essentially from a peace economy. In peace-time the object of all economic effort is (or should be) to increase the welfare of the people and improve their standard of living. In a normal peace-time year—say 1929—the people of Great Britain devoted only about sixpence out of every pound of their income to the maintenance of armed defence forces; the other 19*s*. 6*d*. was devoted to what the people wanted for their comfort or pleasure. But in war-time the community has not merely to continue with that part of its normal work that is indispensable, it also has to build up a gigantic industrial machine for supplying the needs of war. This double task imposes a double burden: we must all work harder in order to increase our production, and we must all consume less, so that a larger proportion of the increased production can go to the war. The demands of war are so unlimited that even with production increased to the maximum and consumption cut to the minimum, there will still be a shortage of almost everything.

The circumstances and objects of a war economy are so completely different from those of a peace economy that many of our economic ideas are turned upside down. At the time that this book is being written we have not, in Great Britain, fully accomplished the transition from a peace economy to a war economy, and many of the changes and restrictions that will be imposed upon us before long are not yet apparent in their full force. But when the war comes to absorb all our energies, we shall find that many of the things that we have tried to do in peace-time will be the very opposite of what we should try to do in war-time. For example, for most of the twenty years between the two wars we have been afflicted with unemployment, and one of the primary objects of all public policy has been to discover means of providing jobs for the unemployed. In war-time the position is exactly reversed. Labour will soon be the scarcest of all commodities, and we shall have to turn the whole of our thinking upside down and invent any number of expedients, not for creating jobs, but for saving labour. Or again, in peace-time imports of foreign goods into the country tend to be looked upon, rightly or wrongly, as a nuisance, since they compete with goods made by British labour. In war-time imports are recognized to be necessary and vital, for they are the only source from which we can get enough of the things that are needed to fight the war. Exports of British goods similarly change their character. In peace-time they are welcome, since they are a means of providing employment for our workers. In war-time, on the other hand, this very fact becomes a disadvantage. Exports are even more necessary in war-time than in peace, but the fact that they absorb British labour is a disadvantage, since man-power in war-time is so scarce that it must be carefully husbanded. Imports and exports broadly pay for each other; but in peace-time the State is often put into the position of trying to sell the maximum of exports for a given amount of imports. In war it tries to get the maximum of imports that can be obtained for its exports.

The most striking difference between a peace economy and a war economy, however, is in its ultimate objective. In peace-time the object of all economic endeavour is to increase the consumption of the people. In war-time it becomes necessary to reduce the consumption of the people by every means and to the utmost tolerable extent. The normal and healthy object of our economic organization becomes for a time a thing to be avoided as much as we can.

The economic task of a nation at war is, then, quite simply this: to mobilize for war the greatest possible quantities of labour, materials, and industrial plant. There are seven things that are chiefly needed for war. These are the seven:

Man-power. There must be enormous numbers of men and women who can be spared from the normal peace-time tasks of providing for the needs of the people, and can be put either to fighting or to supplying the fighting men.

Materials. The munitions factories must be able to get adequate supplies of their essential raw materials—coal, iron, oil, and the rest.

Industrial Capacity. There must be the machinery, or the possibility of building it, for turning the materials into finished weapons of war.

Ships. Materials and finished goods, if they are not all available at home, must be brought across the ocean.

Power to Buy Abroad. A nation may have the ships, but if it cannot pay for the goods to put in them it is helpless.

Food. The people and the army must be fed.

Money. This comes last on the list, for if the other six do not exist, money cannot create them; and if they do exist in adequate quantities, then a shortage of money will not cause the war to be lost. Nevertheless, money has a role to play.

The purpose of this book is to examine the position of Great Britain in each of these seven respects, comparing it, where possible, with that of Germany. First we shall attempt to get a bird's-eye picture of the total economic resources of the two countries and their relative efficiency. Then we shall take up the seven requirements of war and see how we stand in each one.

The economics of war, which is the subject-matter of this book, is necessarily a very unpleasant subject. In plain words, it boils down to the methods by which the welfare of the people can be reduced in order that they may kill more efficiently. Even in these days there may still be some fine qualities brought out by war—heroism, self-sacrifice, comradeship. But none of these lie in the economic field; there are no redeeming features in the economics of war. It is indeed a tragedy that the ruthlessness of a small band of ambitious men should have led us in this year of grace to be devoting our minds to a study of the economics of enforced barbarism.

II

THE ECONOMIC STRENGTH OF THE ALLIES AND GERMANY

THE first commandment of economic war is to produce the maximum and consume the minimum. The more we produce and the less we consume, the greater will be the margin of men and materials that can be devoted to fighting the war. To get an idea of the economic strength of the belligerent nations we therefore need to have some measure of the maximum that they can produce and of the minimum that they need to consume. Neither of these is easy to measure, though it is possible to make a rough first approximation.

A country's production is measured by its National Income. For an individual, it would be a paradox to say that his output was measured by his income. But for a whole community, output and income are the same thing, or as near the same thing as makes no practical difference. The concept of the National Income is so useful, and so vital to the understanding of much that will be said in subsequent pages, that it is worth taking the trouble to get a clear idea of just what it is. Perhaps the easiest way of approaching a definition of the National Income is to say what it is *not*. It is not the income of the Government, but of the whole community, of which the Government takes (in normal times) only a small part. It can best be thought of as the year's output of the whole community, including all its members. 'Output' does not, of course, merely include the production of tangible goods, such as steel and coal and loaves and fishes; it also includes the intangible services which are, in a modern community, the means of livelihood of more than half of the population. The services of the doctor, the shopkeeper, the statesman, the postman, the cook, and the journalist are all included in the National Income. In fact, the output of goods and services of everyone is included. Whenever anybody produces something (or renders a service) and receives money (or the equivalent of money) in return, a contribution has been made to the National Income. The National Income is all-inclusive in that it includes every sort of useful or valuable effort made by the community (defining 'useful or valuable', in the only way that an economist can define them, as meaning 'for which money is paid'). And since the community, broadly speaking, can only consume what it produces, the National Income is also the only source from which the people can be fed and clothed and supplied with necessaries and luxuries and from which the nation can draw the resources that it devotes to the purposes of war.

In theory there would be two ways of calculating the National Income. The first would be to compile a long list of all the things produced and services rendered in the country in a year—the tons of steel, quarters of wheat, hours of labour, and the rest. In order to be able to add them up, each item would have to be given a value in money and the sum total would be the value of the national output in a year. The second method is to add up the money incomes of all the individuals comprising the nation, taking care to include only those receipts which are in return for service rendered or value given—that is to say, excluding mere gifts. The first calculation would give output, the second income, and since, for a whole community, output and income are virtually the same thing, the two methods should give the same result. In fact only the second method is practicable, which perhaps accounts for the fact that the resulting figure is known as the National Income, although it could equally well be called the National Output.

When, therefore, we say that a country has a National Income of £1,000 millions we mean that the individuals comprising that country have incomes that add up to £1,000 millions *or* (which is the same thing) that the country has an annual output of goods and services valued at £1,000 millions. The first charge on this output is to supply the population with the necessaries of life. What is left can be used in peace-time for raising the standard of living above the bare minimum necessary for existence; in war-time it can be used for fighting the enemy. The first commandment of war economics can therefore be re-phrased in this way: to increase the National Income as much as possible, and to devote as high a proportion of it as possible to the war. One qualification needs to be made to this statement. We measure the National Income in money, since that is the only means of adding tons of steel to yards of cloth to hours of labour. But of course it is the steel, the cloth, and the labour that matter; if they all double in price, the figures of the National Income will be doubled, but there will be no real increase in the wealth of the country. So when we say that we want to increase the National Income as much as possible, we mean to increase the real things for which the money figures stand—in short, to increase the *real* National Income.

The conception of the National Income is clear enough; but a number of detailed difficulties arise when we come to try to estimate its size. For example, the community has to spend a certain amount of money each year in keeping in good repair the capital assets it has received from its ancestors and in replacing those that have worn out. Should these expenses be deducted from the total of individual incomes before stating the value of the National Income, or should they be included in the National Income, with the proviso that the upkeep of existing capital is a first charge on the income? Should old-age pensions be included in the National Income, since no service is rendered for them? These and a number of other questions are the subject of controversy among the technicians and they account for the fact that different figures are quoted for the

National Income by different persons and for different purposes. We need not concern ourselves with these controversies in this book. For our purposes, the precise definition we put upon the National Income matters less than that we should stick to the same definition for all our comparisons. The National Income of the United Kingdom, on the definition used here, can be estimated to have been about £6,000 millions at the outbreak of the war in 1939.[1]

Figures like this, however, are of limited value unless we can make a comparison with other countries. We do not want to know our economic strength in absolute terms; we want to know how strong we are relatively to the enemy. A number of technical problems arise when we try to compare the National Incomes of different countries. The estimates may be made on slightly different definitions; there is the problem of converting one currency into another; and there is the problem of putting a numerical valuation on the fact that the standard of living means one thing in one country and another in another country. All these difficulties can be got over by a variety of statistical devices, but they necessarily make the calculation very complex and the results difficult to set out in an entirely simple form. The latest and most comprehensive estimates have been made by Mr. Colin Clark in his book *The Conditions of Economic Progress* (Macmillan, 1940), from which the following figures are drawn. Mr. Clark has calculated the average National Incomes of a large number of countries as they were on the average of the decade 1925–34 and he has expressed the results in 'International Units', an International Unit being the amount of goods and services that one dollar would buy in the United States on the average of the years 1925–34. (In what follows we shall represent the International Unit by the symbol ($), the brackets serving to remind us that the figures are not in dollars pure and simple but in dollars-of-the-purchasing-power-that-dollars-had-in-the-United-States-in 1925–34.) In this way it is possible to add up the National Incomes of different countries. But before we can make a direct comparison between the British Commonwealth and the German Reich, two difficult problems have to be taken into account. First, it is very difficult to assess the National Incomes of colonial territories and, in the following table, the two figures at the bottom of the Allied column (for which Mr. Clark must not be held responsible) are very approximate. Secondly, can we rightly assume that countries like Holland or Denmark, Poland or France, groaning under the conqueror's oppression and cut off, in many cases, both from their normal sources of materials and from their usual markets, will be able and willing to produce their peace-time National Incomes? Clearly not; but if not, what modification in the figures are we to make? In the table, the figures in italics have been quite arbitrarily reduced by one-quarter to allow for this factor.

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[1] *Footnote for economists only.* The definition used is Gross National Income (i.e. including expenditure on the maintenance of existing capital), including transfer incomes (e.g. interest on the National Debt) but excluding indirect taxes. This definition is virtually the same as that of 'Taxable Income', as given by Mr. J. M. Keynes in the *Economic Journal*, March 1940, and used by him in his pamphlet *How to Pay For The War* (Macmillan, 1940). His figure of £5,300 millions refers to the twelve months April 1938–March 1939; the figure of £6,000 millions given above refers to the rate at which National Income was running in August 1939. A rough estimate of the change in activity and in prices between Mr. Keynes's year and the outbreak of war shows that the two figures can be closely reconciled. Mr. Colin Clark's 'Gross National Income' would be about £6,500 millions at the rate of August 1939.

With this prelude we can look at the figures:[1]

National Incomes of the Allies and Germany, 1925–34

	Millions of ($)		*Millions of* ($)
United Kingdom	21,900	Germany (inc. Austria)	19,200
Canada	5,100	Italy	5,300
Australia	2,500		24,500
South Africa	600	France	*9,400*
New Zealand	700	Czechoslovakia	*2,000*
	30,800	Netherlands	*2,000*
		Poland	*1,900*
Remainder of British Commonwealth	21,000	Belgium	*1,500*
		Denmark	*800*
Dutch and Belgian Colonies	4,000	Norway	*500*
	55,800		42,600

These figures, approximate though they are, suggest that the economic of Great Britain and her free

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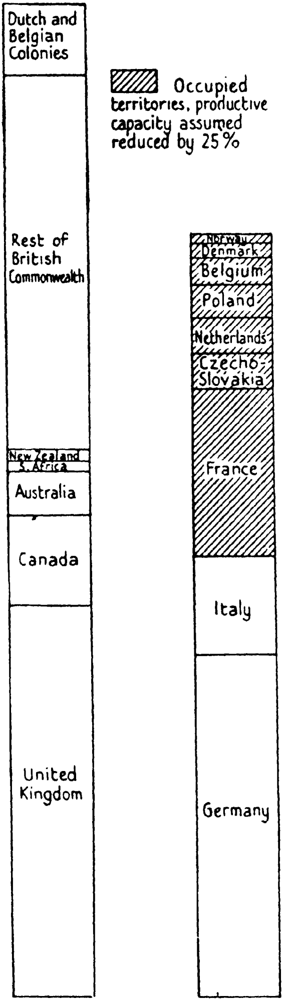
[1] The following alterations, in addition to those mentioned, have been made to Mr. Clark's figures: (1) they have been taken to the nearest hundred million; (2) the figure for South Africa has been adjusted to show, roughly, the National Income of the white population only; (3) the figure for Poland has been adjusted to show, roughly, the proportion attributable to the part of Poland overrun by Germany and exclude that going to Russia.



Economic strength of the Allies and Germany sisters are larger by a substantial margin than those of Germany with her dupes and victims. The table, however, is one of economic output in 1925–34; it is not a table of economic *strength-in-war* in 1940. To convert it into that, we must still do two things. The first is to bring the figures up to date, so that they represent the position in 1940. The second is to estimate how much of these totals can be spared, on either side, for the business of fighting.

Unfortunately, neither task can be done accurately, and certainly not in detail, country by country. There has certainly been an increase on either side since the decade 1925–34; in fact for two reasons the increase has been large. First, the past decade—or at least the last six years—has been a period of more than usually rapid economic progress in Germany and Great Britain and in some of the other countries entered in the table. Secondly, the decade 1925–34 includes the worst years of the great depression, whereas most of the countries in the table were active and prosperous above the normal when the war broke out. We must, then, add something on to the figures on each side. The figures of National Income in Great Britain and Germany, the two largest units, seem to indicate that the increase from 1925–34 to 1939 was almost exactly the same in each country. We shall not be far off if we add the same proportion on to each side to bring the figures up to date; and, as a very rough guess, we can put the proportion at 30 per cent.

The economic output of the Allies then becomes ($)73,000 millions and of Germany and her conquests ($)55,000 millions. Moreover, this comparison makes no allowance for the fact that while Germany was already working at the limit of her capacity when war broke out, there was a considerable margin for further increase in the British Empire. We shall not be falsifying the picture if we say that the ratio of potential productivity, in war conditions, is 7 to 5 in favour of Britain.

How much of this *total* productivity on each side, can be spared for war? Or, to put the same question another way, how little need be devoted to maintaining the minimum standard of living for the civil population? Here we enter the region of guess-work. We shall do well to leave the colonies entirely out of account, if we are not to err on the side of over-optimism; their standards of living are low, and though they undoubtedly have some margin of resources above the necessary subsistence of their populations, it is small and incalculable. Let us take the combined National Incomes of Great Britain and the Dominions, which amounts (when increased by 30 per cent. to bring it up to 1940) to ($)40,000 millions and compare it with the ($)55,000 millions of Germany and her conquests.

How much can each side spare for fighting? One very notable and important fact stands out. Out of her ($)55,000 millions, Germany has to feed and support about 196 millions persons. Out of our

($)40,000 millions, we have only to maintain 68 million persons. Obviously this makes a very great difference, and though we cannot calculate it exactly, it is possible to give an illustration of the sort of effect that is produced. There is a certain amount of evidence to show that in the early months of the war Germany was living on about half of her National Income and devoting the other half to the war. If she can impose the same ratio on her subject peoples, we can say that 196 million people will be living on ($)27,500 millions and devoting ($)27,500 millions to war. If we were willing to accept the same standard of living, our 68 million persons could live on about ($)9,500 millions and we should have rather over ($)30,000 millions left to fight the war. In short, if we were willing and able to draw our belts as tight as the Germans and their subject peoples are compelled to draw theirs, we might actually have a superiority of economic *strength-in-war* in spite of our inferiority in numbers.

Actually, however, we are unlikely to reduce our standards to the level of a slave state even in Great Britain and certainly not in the Dominions. If our average standard of living during the war remains half as high again as the Germans', we shall have economic resources available for war of nearly ($)26,000 millions, against the Germans' ($)27,500 millions. In other words it is entirely reasonable to hope that the British nations alone will be able eventually to bring to bear an aggregate of economic power not inferior to that of Germany, even though she has overrun the Continent. Add in the contribution of India and the colonies (ignored in these calculations) and bear in mind that we shall be able to draw in increasing measure on the National Income of the United States, which is potentially well over ($)80,000 millions, and the final conclusion cannot be other than that the cause of free democracy can mobilize enough economic strength to crush the Nazi tyranny.

To this conclusion, however, a warning must immediately be attached. The comparison we have made is of the *potential* rather than the *actual* strength of the two sides. It is a measure of the resources of men and materials that *could* be used for the war. But before they actually *are* used, they must first be taken away from their normal peace-time uses, re-trained, re-adapted, and applied to their war-time tasks. In a word, they must be mobilized for war. Germany spent six years before the war mobilizing her national economy for it; we made nothing like the same efforts. As a result, there is no equality in the ratio of the economic resources *now being used* for war, and there will not be until we complete our economic mobilization—if our soldiers, sailors, and airmen can gain us enough respite to do so.

The argument of this chapter has been quite general. We have been talking of 'economic resources' in general and we have done very little more than establish the point (which is, after all, fairly obvious) that as soon as economic war becomes totalitarian—that is, as soon as it uses all the resources of men and materials that can be spared—the rich nation secures a double advantage: first, because it has more resources, and second because, being rich, it can at a pinch spare for war purposes a bigger proportion of its resources. But the strength of an economic chain is that of its weakest link. Much of Great Britain's wealth, for instance, comes from her overseas trade. If she had no ships to carry her goods in, or no foreign currency to finance her imports, or if she was unable to gain access to any steel or oil, her peace-time capacity to create wealth would disappear in war and the whole of the argument of the chapter would collapse. We must, therefore, in later chapters, examine the chain link by link. Is it not only a heavier chain as a whole, but also stronger link by link? Have we enough man-power? Have we access to all the raw materials we need? Can we pay for the imports we need? Have we the ships to carry them? Can we feed ourselves? If any one of these links breaks, our superiority in the others will be of no avail. And in each case, we shall have to examine what must be done to change a peace economy into a war economy in the shortest possible period of time.

III

THE NAZI ECONOMIC SYSTEM

IN making the comparisons of National Income which occupied the previous chapter it was necessary to go back to the decade 1925–34, as that is the latest period for which truly comparable figures are available. The figures were brought up to date by adding an identical proportion to each side. But there is a possible objection that might be raised—that certainly would be raised by Dr. Goebbels—to any such procedure. Of the ten years 1925 to 1934 only two fall within the Nazi period. Is it not unfair to judge Nazi Germany by the standards of a period most of which had elapsed before Hitler came to power? Have not the Nazis achieved economic miracles and vastly increased the economic strength of Germany since they took over the Government? Does not this invalidate any comparison based on earlier figures?

It is worth while making a brief digression to examine these questions, particularly since the answering of them will show whether there are any enormous economic advantages in the Nazi economic system to be entered on the credit side of the balance sheet against the enormous debit entries of cruelty, barbarism and tyranny.

On 20 February 1938, in one of his periodical harangues, Herr Hitler treated the Reichstag and the listening world to nearly two hours of economic statistics, all of them designed to illustrate the enormous progress made by Germany under his rule. Most of them compared the results of the year 1937 with those of 1932, the year before he took office; they were undeniably impressive. Thus, industrial production had doubled, coal production had increased by more than half, the manufacture of motor-cars had increased fivefold, even the number of births had increased by almost a third, unemployment had fallen from 6½ millions to less than 500,000. It is on the strength of figures like these that Hitler has acquired his reputation as an economic miracle-worker.

In one all-important respect, however, Hitler was supremely lucky: he took office at the bottom of the depression. For a variety of reasons Germany suffered more severely from the depression than almost any other country except the United States. In the late 1920's foreign capital poured into Germany from America, Britain, Holland, Switzerland, and other creditor countries, and much of the prosperity of the country in 1927–9 was built up on it. When this inflow of capital suddenly stopped and was succeeded by attempts on the part of the creditors to recall their money, the reaction was correspondingly sharp. Moreover, since Germany was under obligation to repay much of her borrowings on demand, to pay interest on the rest, and (until 1931) to pay Reparations as well, she was compelled to pursue a policy of extreme deflation in the attempt to earn enough foreign exchange to meet her obligations. The result was a very severe depression. The level of industrial production fell by 47 per cent. between 1929 and 1932, compared with 46 per cent. in the United States and only 17 per cent. in Great Britain. Unemployment increased threefold in Germany, whereas it barely doubled in Great Britain.

Now it stands to reason that a country which suffers from a severe depression, even if in the subsequent recovery it only gets back to where it started from, will nevertheless be able to show startling figures of progress by measuring from the bottom of the slump to the top of the recovery. It is possible to imagine a country where the level of production might fall by 90 per cent. in a severe slump and then subsequently recover. It is most probable that, if such a thing happened, there would be a change of government at the bottom of the slump and the incoming Fuehrer would be able to boast, a few years later, that under his rule the level of industrial production had increased ninefold. In fact, however, his figures of progress would show, not how good things were under his rule, but how bad they were when he took over.

This is very largely what happened with Herr Hitler. His figures showed not how good the condition of Germany was in 1937 but how bad it had been in 1932. Any country can be proved to be making rapid progress by comparing a year of good trade with a year of bad trade; or, alternatively, it can be demonstrated to be going to the devil by reversing the process. The only fair measure of progress is to compare like with like, to put a year of good trade alongside another year of good trade, to compare 1937 not with 1932 but with 1929. Hitler would doubtless argue that 1932 is a fair criterion for assessing Nazi achievements, since it was the cowardly weaknesses of the Weimar Republic that brought Germany so low. But in that case the equally democratic year 1929, when Germany was just as republican and, by Nazi standards, just as cowardly, would do equally well.

On this fair basis of comparison the achievements of Nazi Germany no longer look very wonderful. In the following table the progress made by Germany and by Great Britain in a number of important particulars is compared. The figures show the progress between 1929 and 1937, since that is the year of which Hitler specifically boasted:

	Great Britain 1937 as compared with 1929	*Germany 1937 as compared with 1929*
	%	%
Industrial production . .	+22·7	+17·2
Production of coal . . .	−6·1	+9·2
Electricity generated . .	+122·5	+55·3
Production of steel . .	+19·2	+22·0
Production of motor-cars .	+112·6	+169·0
Employment	+12·4	+3·0
Real wage-rates . . .	+10·9*	−2·1*

* 1936; figures for 1937 in Germany not available.

There is nothing in this comparison to demonstrate the alleged economic superiority of the Nazi system over the democratic; on the contrary, the British record is, on the whole, better than the German. To carry the comparison on to 1939 presents some difficulties; some German figures have been suppressed, others have been adjusted to reflect the incorporation of Austria and the Sudetenland. It is probable, however, that if the comparison were made in 1939 it would be somewhat more favourable to Germany, especially in the industrial items. Between 1937 and 1939 Nazi Germany was frantically preparing for war and that would naturally induce a rapid increase in the output of such things as coal, steel, and motor vehicles. But one of the figures that it *is* possible to compare in 1939 is the total of employment—that is, the total number of people at work and therefore, in rough measure, the total output of all goods and services. In the first six months of 1939 the volume of employment in Great Britain was 14·0 per cent. higher than in 1929; in Germany it was 12·1 per cent. higher. Britain had a sharp industrial recession in 1938, while Germany, driven on by her war preparations, went straight ahead; in spite of that, the democratic system held its own in the production of wealth in general, even if it fell behind slightly, in those years of so-called peace, in the production of munitions.

The Nazis' claim, however, is specific as well as general. Not only do they claim to have mastered the economic system in general, they say that they have, in particular, wiped out unemployment. This has a very powerful appeal to the ordinary man in any country, and the Nazis have acquired a great deal of merit by it in their own country and elsewhere. Let us briefly examine what really happened. There can be no doubt that they did get rid of unemployment. In 1929 there were, on the average, 1,892,000 persons unemployed in Germany and 1,212,000 in Great Britain; after allowing for the difference in total population this was about the same proportion in each country (actually it was 9·6 per cent. of the total labour force included in the unemployment scheme in Germany and 10·3 per cent. in Great Britain). On the average of the first six months of 1939, unemployment had fallen to 141,000 in Germany, but it was 1,691,000 in Great Britain. Manifestly, unemployment had gone down almost to the vanishing-point in Germany and had gone up in Great Britain.

For those simple-minded people who are content to look merely at the figure of unemployment this is the end of the matter. But let us examine *why* there was this divergent experience in the two countries. It has already been pointed out that there was a greater increase in *employment* in Britain and Germany. Clearly our increase in *unemployment* was not due to any relative failure in providing jobs; on the contrary, we provided more jobs than the Nazis did. What, then, is the explanation? There are, in reality, two explanations, one minor and one major. The minor explanation is that, by an accident of the birth-rate, the number of people of working age in Great Britain has been increasing very rapidly in the past decade.

In 1939 there were 1,410,000 more jobs in Great Britain than in 1929 (a very rapid rate of increase); but there were 1,889,000 more people wanting jobs. Germany has not had this problem to meet in any such severe degree. The total number of people between the ages of 15 and 65 has increased over the past decade by about 8 per cent. in Great Britain, but by only 5 per cent. in Germany.

This, however, is the minor explanation. The major explanation is the perfectly simple one that Germany, in the years *before* the war broke out, put something like 2 million men into uniform, in the Army, the Black Guard, the Brown Shirts, the Labour Corps, and the rest. If we had put 2 million men into uniform between 1935 and 1939 we too should have had a shortage of labour instead of unemployment.[1]

The Nazis' boasted success in getting rid of unemployment therefore amounts, on examination, to little more than the fact that they called up the unemployed for military service. It is a 'cure' for unemployment that we could have carried out ourselves at any time if we had been content to turn ourselves, in time of peace, into a militaristic State.

It follows from this fact that the Nazis' abolition of unemployment brought little or no benefit to the standard of living of the people. When the unemployed are absorbed into genuine work they produce wealth for the community, themselves included, to consume. When they are put into uniform they still have to be supported by the rest of the community. Great Britain and Germany have both enjoyed, in the last decade, a period of very rapid progress; the great difference between them is that the economic progress in Great Britain has accrued to the benefit of the standard of living of the people, in Germany it has been diverted to armaments. It would be a mistake, however, to assume that there has been no increase in the standard of living in Germany in recent years. It fell very heavily in the years of depression from 1929 to 1932 and has since recovered. The real indictment of the Nazi system is not so much that it has positively depressed the standard of living of the German people (though it has done so in certain respects) as that it has robbed the people of the progress they would otherwise have made. In Great Britain in 1939, rates of wages were, on the average, 7½ per cent. higher than in 1929, while the cost of living was 6 per cent. lower—a combined improvement in *real* wage-rates (i.e. wage rates calculated not in money but in terms of what they will buy) of over 14 per cent. For Germany, similar figures can hardly be quoted. German figures of wages are meaningless, since they take no account of the various compulsory and 'voluntary' deductions that are made. And figures of the cost of living take no account of the many articles that had become unobtainable long before the war broke out or of the deterioration in the quality of those that remained. Though we cannot put a figure on it, we can safely say that the German standard of living in 1939 was certainly no higher, and was probably lower, than in 1929.

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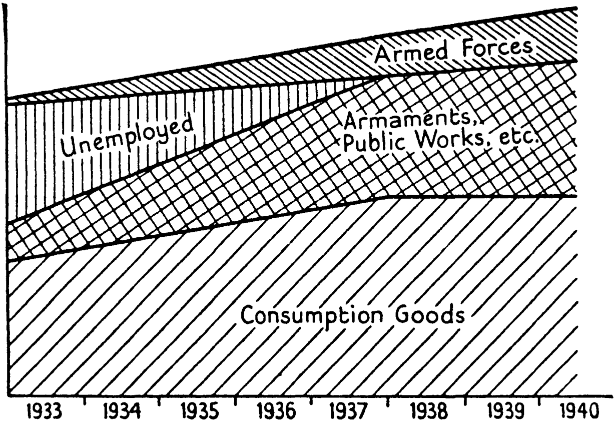
[1] The fact that we have put well over a million men into uniform since the war began without abolishing unemployment proves little or nothing. It was done very suddenly; and this, together with the onset of war, inevitably produced some dislocation. The unemployed will vanish very quickly.

The conclusion of the matter is, then, that the British economic system in the last years of peace did at least as well as the Nazi system in providing jobs for those who wanted them and infinitely better in improving the standard of living. There is nothing in the comparison of the two systems of which a democrat need be in the least ashamed. There are no economic miracles in dictatorship to offset the heavy debit balance of brutality and repression.

But must we concede no economic successes to the Nazis? Have they done nothing successful, even if it is not enough to establish a superiority for their system? The economic historian of the future will probably conclude that the Nazis had two successes in the economic field. The first of these was that they showed how the potential wealth represented by unemployed labour and capital could be used—albeit for unworthy purposes. The diagram on p. 34 is a schematic representation of the economic development of Germany under Hitler's rule. The top line shows the steady and gradual growth of the total available man-power—that is, of the total potential capacity to create wealth. The divisions of this total show how the man-power was in fact used. In 1932 a large fraction was unemployed, and the labour devoted to producing capital and armaments was very small. Since then the total number of men employed (the two lower divisions together) has steadily increased, but the lion's share of what they have produced has been armaments. Germany's rearming, in fact, was paid for not by cutting down the standard of consumption but by employing the unemployed. This was done by a shrewd and ingenious financial policy, presided over by the practical genius of Dr. Schacht. Dr. Schacht's true greatness resides in his realization of the fact that in economics few doctrines are right at all times. He first attained fame by stopping the great German inflation of 1923 and preaching the doctrine that, when men and materials are fully employed, the mere creation of money can-



Germany's Man-power

not possibly do good or create prosperity, but will merely drive prices up. In 1932 he saw that the opposite was true: that if men and materials are idle, the creation of money to pay for their employment does no harm. Germany, thanks to Dr. Schacht, got her arms for no greater economic cost than the printing of money. To have demonstrated that unemployment can be cured by making armaments and paying for them with created money is not, to be sure, the same thing as proving that unemployment can be cured by any method less damaging to the peace of nations. It is nevertheless a demonstration of some value for future economic policy in all countries.

But the importance of this demonstration should not be exaggerated, nor should it be applied to circumstances to which it has no relevance. In 1938 Dr. Schacht saw that the time was coming to return to the other aspect of the basic economic truth. He had proved that what is practically feasible need not be stopped by mere absence of money. But it is also true that what is not practically feasible cannot be made possible by purely monetary means. By the spring of 1938 the available men were already employed; if there was to be any further expansion in the production of armaments it would have to be at the expense of consumption (this can be seen from the diagram on p. 34). In these circumstances, the further creation of money would merely bring about an inflationary rise of prices—the thing that every

German, with his memories of 1923, most dreads. Dr. Schacht accordingly advised, in the spring of 1938, that any further expansion of armaments should be paid for out of taxes. His advice was unpopular and he was dismissed. This is not the place to examine further the proper roles of taxation, borrowing, and inflation in financing armaments—we shall come back to the subject in Chapter X. For the moment we need only note that the success of the Nazis' methods of financing recovery from depression in the years 1933–8 is relevant only to a situation in which there is a large mass of unemployment. It has little or no bearing on the finance of war—we have the testimony of Dr. Schacht himself to that effect.

The other success of the Nazis was the speed and scope with which they built a war economy so formidable that it is going to take us a great outpouring of blood and treasure to overthrow it. For this they had certain advantages. They could compel their people to do what they were told; they did not have to rely on persuasion. They were utterly ruthless in the ends they sought, without any humanitarian or moral reservations. And they possessed the elasticity of mind that enabled them to change their plans whenever a failure became apparent. The qualities that forged an efficient and gigantic military machine are not those that anyone would wish to emulate for the economics of peace. But it is as well to be aware what we are up against for the duration of the war.

IV

MAN-POWER

OUR digression, in the previous chapter, into Nazi economics has shown that there is no particular magic in dictatorship to offset the inherent weakness of Germany's position that was exposed in Chapter II. The Nazis have been shrewd and prompt in mobilizing their limited resources. But they have no secret formula for overcoming the basic economic weaknesses of their country. Our task is to mobilize our riches.

This chapter is concerned only with one facet—though the most important—of the whole problem of economic-strength-in-war, namely, the question of man-power. Let us begin by setting out the total populations of the remaining Allies on the one hand, and of Germany and her conquests on the other. The figures, which are shown in the table on the next page, are not all equally up to date, and the British figures on the whole are older than the German, so that the British populations are probably understated. The French colonies, whose status is doubtful, have been entirely omitted. If we include the full populations of India and of the British, Dutch, and Belgian Empires, there is clearly an enormous preponderance of man-power. But that would not be a fair comparison, since 10 million Africans are clearly not the economic or military equal of 10

White Populations:

United Kingdom	47,480,000
Canada	10,377,000
Australia	6,867,000
South Africa	2,004,000
New Zealand	1,574,000
Total	68,302,000

Coloured Populations:*

India and Burma	368,500,000
South Africa	7,600,000
British Crown Colonies	53,413,000
Dutch and Belgian Colonies	78,320,000
Total	507,833,000
Grand Total	576,135,000

Germany	66,176,000
Austria	6,760,000
Italy	42,570,000
Total	115,506,000

Occupied Territories:

France	41,906,000
Czechoslovakia	13,794,000
Poland†	22,000,000
Denmark	3,706,000
Norway	3,000,000
Netherlands	8,470,000
Belgium	8,150,000
Total	101,026,000
Grand Total	216,532,000

* Including white inhabitants of Colonies.

† German-occupied portion; approximate figure.

million Germans. On the other hand, it would be an insult to the colonial populations to say that they make no contribution at all towards the cause which (since they know Hitler's views on subject races) they have at heart fully as much as we have ourselves.

We must be careful, however, in every branch of our subject, not to lull ourselves with exaggerated optimism. Let us, therefore, in the interests of conservative reckoning, leave the coloured citizens of the Commonwealth out of the account, remembering only that any conclusion we reach will accordingly be less favourable to us than it should be. Let us accept the fact that we are 68 millions of free men facing 115 million Germans and Italians plus a further 100 millions of subjects and tributaries. It would be foolish to pretend that the odds are anything but heavy against us. But there are ways in which they can be mitigated.

Something has already been said, in Chapter I, about the different complexion that modern warfare has put on the question of man-power. The 1914 conception of the problem was to put every available able-bodied man into the armies. The 1940 conception recognizes that, of the millions of men and women mobilized for war, only the minority will be in the armed forces, and only the minority of the minority in the firing-line. But this changed disposition of the available man-power has one most important consequence. As between Englishmen, Frenchmen, and Germans there is a rough equality of value between man and man, *so long as they are soldiers in the field.* National romanticism to the contrary notwithstanding, the equation is 1,000 British soldiers = 1,000 French soldiers = 1,000 German soldiers. But as soon as men are regarded not as soldiers in the trenches but as workers at home, a difference emerges. This was implicit in the figures of National Income quoted in Chapter II. Germany, in spite of her larger population, has a smaller National Income than Great Britain; it follows that the average German has a lower economic output than the average Englishman. On Mr. Colin Clark's figures for 1925–34 the ratio was approximately 1,000 Englishmen = 1,600 Germans.[1] In other words, the economic output of the average German actually in work at that time was only 62 per cent. of that of the average Englishman, and there is no evidence that the relative position has changed in the intervening years.

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[1] Colin Clark, *The Conditions of Economic Progress*, p. 77.

At first sight this seems to be an incredible figure. The German industrial worker is skilled and industrious, and those who, in peace-time, have to compete with him in neutral markets do not underrate his worth. The English worker is, on the average, assisted by a greater amount of machinery—every pair of English hands is reinforced by rather more horse-power—but it seems incredible that this should make so great a difference. And in fact it does not; there is not much difference between the British and German *industrial* worker; the results of the industrial censuses taken in the two countries suggest that the British industrial worker produces only about 10 per cent. more than the German. Why then is there such a big difference in the total output of the countries as a whole? The reason is to be sought, not in industry, but in agriculture. In Germany, 14 per cent. of the population of working age is engaged in agriculture, in the United Kingdom only 3½ per cent. Germany (the so-called 'Old Reich' without Austria) has a total population less than half as large again as the United Kingdom; but it has nearly six times as many people working on the land. Now in any country the value of the output of a land worker is less than that of an industrial worker (that is why agricultural wages are lower), so that any country with a large proportion of agricultural workers will, as a consequence, have its average of output per worker, in industry and agriculture together, pulled down. But this is not the only way in which agriculture affects the comparison between Great Britain and Germany. The British farmer, since he is not trying to grow *all* the food the country needs, is free to concentrate on those where he can get a better output; accordingly, his average output per head is higher than that of the German farmer—in fact, the figures suggest that the average value of the German agricultural worker's production is only about 46 per cent. of the British.

This question of the method by which the two countries secure their food-supplies is so important, and so little understood, that it is worth examining in some detail. In each country there are four categories of people whose labour contributes to the food-supply of the country: (i) the farmers and agricultural labourers; (ii) those who make the materials, machinery, &c., needed by the farmer; (iii) those who make the exports that are sold in exchange for imported food; (iv) those who are engaged in distributing and manufacturing food. The difference between the British and the German method lies in the fact that the Germans put the bulk of their effort into category (i); they grow most of their food at home, import very little, and therefore have to give very little exports in exchange for food. We, on the contrary, get rather more than half our food from abroad in normal times, paying for it with our exports of manufactures. The

German method has obvious advantages from the point of view of security in war-time. The nearer a country comes to the point at which it imports no food at all, the nearer it is to security against starvation by blockade in war-time. But the British method is much more economical of man-power. Farmers in this country can concentrate on crops where there is a big return for each man employed. We can grow the other crops in countries where the climate, the nature of the soil, and social organization make it possible for one man to grow far more food in a year than is possible by peasant proprietors in the cold and damp continent of Europe. And, as a final advantage, not only do we get our food more cheaply by importing it, but we can pay for it with our manufactures, where our man-power is most productive. The British system has the defect that it depends absolutely on keeping the sea communications open; but if that can be done, it feeds the people with considerably less expenditure of man-power.

The following figures are a rough estimate of the number of men required in Great Britain and Germany to feed 1,000 consumers:[1]

	Great Britain	*Germany*
Working on the land	24	96
Making agricultural machinery, materials, &c.	10	14
Making exports to pay for imports of food and feeding-stuffs	21	4
Distributing and manufacturing food-stuffs	43	48
Total	98	162

[1] *Footnote for economists only.* A few notes on the method of calculation may be desirable. The first figure is derived from the censu

These figures show that our method of getting food saves us 64 workers in every 1,000 consumers. In the whole 47 million of our population, that is a saving, compared with the German system, of almost exactly 3 million people. In peace-time these 3 millions can be employed in ways that increase the standard of living; in war-time they can be devoted to the war effort.

This is a comparison between Great Britain alone, on the one side, and Germany alone, on the other. Does it hold good of the two sides as a whole? On balance it probably does. The British Dominions are

returns. It represents the labour force engaged in agriculture, divided by the total population. The German census returned 9,200,000 persons as engaged in agriculture. But as very many of these were women, it is probable that they were not engaged full-time in agriculture—the wives of peasants, for example. In order not to exaggerate the calculation, the German figure has been arbitrarily reduced to 6,400,000. The second line is derived from an estimate of necessary expenditure by farmers. The third line is arrived at in the following way. First, the value of imports of food and feeding-stuffs is taken from the trade returns. Secondly, this figure is adjusted for the effect of receipts of interest and dividends on foreign investments (roughly one-quarter of all imports into the United Kingdom does not have to be paid for with the products of current labour, so we can reckon that labour has to be found in the export industries to produce goods to the value of only three-quarters of the imports). Thirdly, the average net output per head in the export industries is estimated from the Census of Production. Finally, the adjusted figure of imports is divided by the average net output per head. The fourth line of figures is a direct estimate derived by subtracting the value of food at the farm or port from total expenditure on food. These figures, when presented in a slightly different form in *The Sinews of War* (they then included only the first and third lines), were criticized in the *Economic Journal* on the score that they omitted the labour employed in building and manning very efficient producers of food. (It is true, of course, that a large proportion of their populations is engaged in agriculture; but this is because they are *exporters* of food; they grow *their own* food with very little expenditure of labour.) On the other hand, Germany's subject countries, with the exception of Denmark, are even more prodigal of man-power in their food production than Germany itself. France has a large peasant population and produces her food under conditions similar to those of Germany. Our methods of feeding ourselves bring us a gain in man-power that can be reckoned in millions.

This is a very considerable advantage. But it is increased in other ways. Germany applies the same

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ships and also 'the additional numbers employed in organizing distribution and exchange on a more complex international scale'. But this criticism is inaccurate. The value of imports is taken at the c.i.f. figure, and therefore includes a full payment for the use of ships (including their capital cost) and for at least the greater part of the special organization necessary for dealing with international trade. The use of ships, insurance facilities, &c., in *exports* is automatically included; our imports are paid for partly in visible, partly in invisible, exports. It is true that the cost of shipping and insurance is greater in war-time; also the relative level of prices may change to our disadvantage. But it is difficult to know what allowance to make for these possibilities. They will certainly not affect the main conclusion. Offsetting this fact is the consideration that the figures represent the number of people required to produce the food that actually was consumed in the two countries in a peace-time year; in so far as our standard of feeding was higher than Germany's, we should have a greater margin for economy. There is also the possibility that, in war-time, part of our imports may be paid for by realizing our foreign assets—i.e. at no current cost in labour. For these reasons, the figures may be allowed to stand as representative of war-time conditions also.

methods of expensive home production to some of her raw materials. Great Britain meets her requirements of materials by importing them, and exporting finished manufactures in payment. Germany, in the past, has done likewise. But since the Nazi revolution, the German Government, with its eye on the blockading power of the British Navy, has been doing everything in its power to reduce Germany's dependence on imported raw materials. There are three ways of doing this. The first is to exploit to the full such scanty and neglected reserves of minerals as are to be found in German territory. For example, there are in Brunswick extensive deposits of iron ore. These have been known for some time, but the ore is of such a low grade—that is, there is so little iron to each ton of ore mined—that it has never hitherto paid to mine it. Under Field-Marshal Goering's Four-Year Plan, the expense is being disregarded and the low-grade iron ore is being mined and used. Secondly, it is possible, within limits, to substitute materials that are available for materials that are not. Thus glass can be used instead of porcelain for electric insulators, plastic materials instead of metal for aeroplane parts, aluminium for copper, &c. And thirdly, some missing raw materials can be replaced by the invention of synthetic chemical substitutes. Germany has gone a long way in this direction in recent years. Thus, petrol is made out of German coal, substitute rubber ('Buna') is made out of German coal and lime (with the use of prodigious amounts of electricity), staple fibre, which comes ultimately from trees, can be made to take the place of cotton and wool, and so forth.

By these means much can be, and has been, done—though not enough, as will be shown in the next chapter—to meet all Germany's requirements. But all three methods have this in common: they are very expensive. A ton of pig iron made from low-grade ore costs much more than a ton made from high-grade imported ore. If porcelain is usually preferred to glass for insulators the reason is that glass is either less suitable or more costly. And all the synthetic *ersatz* materials are extremely expensive to make. In England a gallon of petrol made from coal costs about twice as much as a gallon of imported petrol, and the ratio of cost is probably about the same in Germany. In the autumn of 1937, when the price of natural rubber was higher than usual, the price of 'Buna', or synthetic rubber, was almost exactly three times higher still.

If the extra expense of these methods merely meant that they required more money, that would not in itself be an insuperable obstacle. But high cost is merely a reflexion of the fact that all these methods are wasteful of labour. Pig iron made from low-grade ore costs more than if it were made from imported ore because more men have to be employed mining the ore (since more tons have to be mined to get a ton of iron content), and more employed mining coal with which to smelt it. 'Buna' costs more than rubber because the number of man-hours of work needed to provide the coal, the lime, and the electricity out of which it is made is more than the number of man-hours required to produce natural rubber.

So this is a second way in which Germany wastes man-power in order to be self-sufficient. For every hundred tons of rubber Great Britain uses (at the present price) she has expended the labour of something like 45 men for a year. For every hundred tons of 'Buna' that Germany uses she has expended the labour of about 75 men for a year. So that in addition to the extra 64 men that Germany uses to feed every 1,000 consumers, she also needs more men than Great Britain to provide the industrial raw materials for 1,000 consumers. It is, unfortunately, not possible to make even an approximate estimate of the figure. But in war-time, when labour is scarce, it must be a factor of considerable importance. And the more Germany succeeds in making her raw materials at home, the greater will Britain's advantage in man-power become.

These advantages exist in peace as well as in war. Indeed, the real meaning of the fact that Great Britain enjoys a higher standard of living than Germany is that we have to employ a smaller proportion of our labour force on providing food and the essential materials. But what happens to the workers that we have to spare because of our more labour-saving methods of procuring food and raw materials? Some of them, unfortunately, remain unemployed.

In September 1939 there were said to be only about 100,000 unemployed in Germany, but there were 1,330,000 in Great Britain. But large though this figure is, it is only 3 in every 100 consumers and does not account for more than a small part of our advantage in man-power; and, of course, most of these unemployed will be directly or indirectly available for war work of some kind. In addition to those who are involuntarily out of work, there are those who choose to seek no employment. This can be seen chiefly among the women. In Germany 49 per cent. of the women in the working ages are actually occupied; in Great Britain only 34 per cent. This, again, is a reserve that we can draw upon in wartime.

But the biggest reservoir of labour is to be found in the non-essential trades. As a country's standard of living rises, fewer of its workers are needed to produce the essential minimum, and more can go into making less essential things or providing services. Between 1921 and 1931 the number of people in England and Wales engaged in the various forms of transport and communication *increased* by 150,000, those working in commerce (including shopkeeping), finance, and insurance *increased* by 510,000, in entertainments and sport by 19,000, in personal service by 373,000, and the number of clerks by 378,000. In these four categories alone, then, there was an *increase* of 1,430,000 in the ten years 1921 to 1931, and although there has been no census since 1931, we can safely say that there are 3 million more people working in these trades in the whole of Great Britain in 1939 than there were in 1921. But the total population of the country is not very much larger now than it was then and we can surely get along, at a pinch, with the amount of transport, of entertainment, of personal service, and of clerking that we had twenty years ago; we were comfortable enough then and to go back to the 1921 standard for a few years will hardly break us. If we do, there will be 3 million men and women released for war-work. Germany has no comparable margin of man-power. The number of people in these industries is relatively smaller: transport, commerce, finance, and personal service employed only about 11 people out of every 100 of the population in Germany in 1933, compared with 16 in 100 in England and Wales in 1931. Moreover, the increase in these categories of labour has been far smaller in recent years. The numbers in wholesale and retail trade, finance, and personal service increased between 1921 and 1931 by nearly 700,000 in England and Wales, but by only 170,000 in eight years in Germany.

This is merely one illustration of where the extra man-power can be found. This chapter has been devoted to demonstrating that we can find more men and women out of every million for fighting and war industries than Germany can, and thus partially redress our lack of millions. It is the task of the Government to find them. There is one respect in which we have hardly yet drawn the logical conclusion from the discovery that, in modern warfare, the industrial front requires more man-power than the firing-line. When it is a question of recruiting men for the fighting services, we get them by conscription. We call them up in an orderly fashion, with an elaborate apparatus of reserved occupations to make sure that no essential worker is taken for the army, and we train them for their new job entirely at the public expense. But this is for the *smaller* part of the general task of mobilizing man-power. When it is a question of mobilizing man-power for the economic front, we have hitherto done nothing of the sort. There were no legal powers to enforce conscription of labour until May 1940, and little use has yet been made of the powers then granted. There is to be an expansion in the facilities for training unskilled workers, but it is still in the embryo stage. We have not yet reached the stage of setting up a vast Industrial Army alongside the Fighting Army.

This is the most serious gap in the whole of our present arrangements for mobilizing for war. There should be a gigantic recruiting campaign of the kind that was used to get volunteer soldiers in the early days of the last war. Above all, there should be training, with free maintenance, for all who offer themselves.

Only so shall we make the most of our man-power. That must be our obvious first objective. But we cannot hope by ourselves alone to overtake the formidable advantage that Hitler has gained by his domination of 216 million Continental Europeans. To establish an equality of man-power we need the aid of all the English-speaking peoples.

V

THE BLOCKADE

NEXT most important to man-power is an adequate supply of essential raw materials. Indeed, it is hard to say which of the two is the more important, for if materials are useless without men to employ them, men, in modern warfare, are almost as useless as inert materials if they are not fed and fully equipped with weapons and ammunition. An equipped army nowadays can quickly defeat one that consists of men only. From man-power we must, therefore, turn to material-power and attempt to assess the relative strength of the two sides.

War uses enormous quantities of raw materials, and there are very few forms of raw materials that cannot be used for a warlike purpose. But there is, obviously, a gradation of usefulness: some materials are absolutely essential; some can be replaced or done without, but only with great difficulty; others are a convenience rather than a necessity. Since we have no space for a complete survey of the whole range of raw materials, we must confine ourselves to the more important ones. In particular, we can distinguish eight materials, or groups of materials, that a nation at war must have:

1. *Food.* This is, naturally, the most vital of all. A lack of other materials may make a nation defenceless before the enemy's attack, but lack

of food may make it surrender without even waiting for the enemy to attack. On the other hand, it differs from most of the others in that no more is needed than in peace-time.

2. *Steel.* This is, beyond question, Raw Material No. 1 for the industry of war. To have steel, a country must have both the furnaces to make it in and also a supply of the materials from which it is made, of which coal, iron ore, and steel scrap are the essential ones.
3. *Coal* is needed for many other things as well as for steel-making and therefore deserves a place of its own in the list.
4. *Other metals.* These are needed in a bewildering array. Small quantities of many of the rarer metals—nickel, chrome, manganese, molybdenum, magnesite, wolfram, tungsten—are needed to produce steels with special toughness or other special qualities. These are usually known as the ferro-alloys. There are also the non-ferrous metals (i.e. those that have nothing to do with steel), of which the chief are copper, tin, lead, zinc, and aluminium. All these are needed in greater or less degree, copper perhaps most and tin perhaps least.
5. *Textiles.* Cotton is needed for two things in war-time—clothes and explosives. Wool is wanted for uniforms. Other fibres are also valuable—hemp (for ropes), jute (for sandbags), flax (for linen), and sisal. Rayon, the

of Economic Warfare could identify and seize goods that were destined for Germany. The neutrals that lie round Germany's frontiers were invited to enter into engagements with Great Britain that nothing they themselves imported should be passed on to Germany. If there was reason to believe that these undertakings were not being observed, it was always open to Great Britain to ration the neutrals for their supplies of materials from overseas in order to ensure that they did not import more than they needed for themselves.

By this means the Allied blockade sought, with great success, to prevent Germany from getting any of her normal supplies from Africa, America, Australasia, and from those parts of Asia and Europe that she could not reach overland (i.e. Spain, Portugal, and virtually the whole of Asia).

There were, unquestionably, some leaks in the blockade. Occasionally, some German agent successfully masqueraded as a genuine neutral. Some neutral countries were suspected of deliberately breaking their trade agreements with the Allies; but it was difficult to prove the breaches and there were strong diplomatic reasons against taking any retaliatory action on the neutral's own trade. Then there was one port that we could not fully control—namely, Vladivostok in the Pacific, at the eastern end of the Trans-Siberian Railway. The railway journey from Vladivostok to Germany is thousands of miles long and the total volume of goods that can be carried is not very large; but it was large enough to provide Germany with her needs of several specialties, like molybdenum or rubber. But in spite of these leaks, the Allied blockade did ensure that Germany was cut off from almost all the supplies of raw materials that she received in time of peace.

Since May 10th, however, the whole problem of the blockade has been immensely simplified for us. For one thing, there is no longer a fringe of neutral states along Germany's western and southern frontiers. Instead of all the complications of contraband control and rationing, we can now concentrate on the much simpler business of simply stopping all shipping for the Continent (with the very small exceptions of the trade going to Spain, Portugal, and Balkan ports). And secondly, most of the materials that were passing through Vladivostok came from the Netherlands Indies, which are now under Allied control. The very success of Hitler's *Blitzkrieg* has made it easier to blockade him.

There are, of course, some neutral countries where Germany can still compete with us—Spain, Russia, Hungary, Jugoslavia, Roumania, Bulgaria, Turkey, Greece. We cannot stop her from getting supplies from these countries, but we can make it more difficult. By stopping her exports to the outer world, we make it more difficult for her to earn enough money to pay for what she wants from her neighbours. Secondly, in all the neutral countries that are accessible to Germany we can do our best to

Germany may get its supplies of grains, the animal population is likely to go short.

This leads directly to the supply of meat and other animal products. Normally, Germany supplies about four-fifths of its own requirements of meat, butter, and eggs. The remaining fifth has to be imported. Animal products differ from other foodstuffs in that the supplies can be increased for a time by progressively slaughtering the herds—at the cost of a severe shortage later. Thus if animal feeding-stuffs are scarce, the first reaction is to *increase* the supply of meat. This is what is happening in Germany. Shortage of maize and of oilcake (to be mentioned in a minute) is leading to the slaughter of live stock and as a result the meat ration is generous for the present. But after the winter of 1940–1 there will be a progressively increasing shortage of meat, butter, eggs, &c. This course of events will be intensified by the occupation of Denmark, which in peace-time supplies Germany both with meat and with butter—but can do so only if she can import feeding-stuffs for her cattle and pigs. The effect of the fact that Denmark is now cut off from the world by the British blockade will be to increase the supply of meat still further in 1940, but still further reduce it in 1941. The occupation of Holland, whose position is similar to that of Denmark, will have a broadly similar result.

The greatest weakness in Germany's food position is in whale oil and vegetable fats, of which she has virtually no supplies herself and can get very little from the adjoining countries. These are needed not only for oilcake for animals but also for margarine, cooking fats, and other purposes. They are an unobtrusive but vital element in a balanced diet. Germany is believed to have some stocks of these materials, but they cannot exceed six months' supply at the most.

In general, then, the German population will get enough bread, roots, and vegetables, unless the harvests are very bad. There has been a shortage of vegetable fats from the beginning of the war and, starting in 1941, there will be a progressively more intense shortage of meat and all animal fats.

The conclusion of the matter is that the German people are unlikely to starve unless the harvest is bad. But they will be very badly fed after 1940, and their diet will become more and more unbalanced, with all that that means in discontent, disease, and lowered vitality.

The conquest of France has made no appreciable difference to the food outlook for Germany. France is almost, but not quite, self-sufficient in food; Italy is in about the same position. Holland and Belgium have to import food. The continent of Europe as a whole does not grow enough food to feed itself. When the harvests are bad—as they are likely to be in 1940, owing to the weather, the damage done by war, and the mobilization of so many peasants—Europe might starve without imports from other continents, which the British Navy can stop.

2. *Coal.* Both Germany and Great Britain have considerable supplies of coal. At the beginning of the war, Germany had enough for all her needs, unless the expansion of the various substitute industries, producing oil-from-coal, artificial rubber, &c., greatly increased their requirements. Indeed, at that time it looked as if the chief difficulty in connexion with the supply of coal with which both sides would be faced would be transport. In Great Britain, much coal is carried in normal times by coastwise shipping and the addition of this burden to the traffic on the railways creates difficulties when weather conditions are bad. Some British coal was also needed for France, whose domestic production is not quite large enough for her own requirements. Germany, on her side, has difficulty in winter in moving her coal, as the canals freeze. Most of her exports of coal in normal times go by sea from the mouth of the Rhine. These exports were stopped by the British blockade in March 1940, and Germany was then faced with the dilemma either of putting on her railway system, already strained, the additional burden of carrying a million tons of coal a month over the Alps to Italy or else of abandoning this very lucrative trade.

The conquest of France and the Low Countries and Italy's entry into the war, however, have changed the coal picture. The British coal industry is now relieved of the necessity of producing and shipping large quantities of coal for Italy and

France, which formerly imposed a heavy strain on our resources. Germany, on the other hand, has made herself responsible for the whole of the coal requirements of Italy, France, Holland, and Belgium, and these countries, though they produce some coal, do not produce nearly as much as they consume. There will be a shortage of fuel in Hitler's Europe next winter.

3. *Steel.* Two things are needed for making steel —plant and raw materials. In plant capacity, at the beginning of the war, the two sides were not far from equal. In 1937 Germany, Czechoslovakia, and Poland produced about 30 million tons of crude steel. Great Britain and France together produced 21 million tons; but they had in that year a greater margin of unused capacity than Germany. Moreover, the British Dominions and India produced another 3¾ million tons.

We have already seen that both sides had enough coal, which is one of the necessary ingredients of steel. But in the other ingredients there was a marked difference. Apart from coal, these other ingredients are pig-iron—itself made from iron ore—and steel scrap (i.e. any form of old steel). To a certain extent pig iron and scrap are alternatives and the proportions of the two can be varied. But a great deal depends on the particular process used. By the Siemens-Martin process, which is the one most used in Great Britain, large quantities of scrap can be used; in 1937 the British steel industry used more scrap than pig iron. But by the Bessemer or Thomas process, which is usual in Germany, much less scrap can be used; iron ore is essential, and it must contain at least a certain minimum of phosphorus. France is in a happy position as regards raw materials for steel: she makes steel by the Bessemer process and has more excellent iron ore in Lorraine, hard behind the Maginot Line, than she can herself use. Both Germany and Great Britain, on the other hand, have to import their iron ore.

To talk about iron ore in terms of its weight can be greatly misleading, since the quality of different ores varies enormously; the only appropriate measure is the weight of pure iron contained in the ore—the so-called 'metal content'. In 1938 Germany used, in round figures, 15 million tons of iron ore, measured in metal content. Of this total, approximately one-third was mined within Germany herself and two-thirds, or 10 million tons, was imported. The biggest source was Sweden and Norway, which together sent 6¼ million tons; the second was France (about 2 million tons); the third was Spain (less than 1 million tons). At the outbreak of war the French and Spanish supplies were cut off. In the winter of 1939–40 Germany's sources of iron ore were her own territory (whose output had by that time probably increased to 6 million tons), Sweden and Norway (6¼ million tons), and Luxemburg (½ million tons), making perhaps 13 million tons in all. This was not a satisfactory position; the supply was 2 million tons less than in 1938, although the need for steel in war is higher than in peace.

The need for iron ore undoubtedly played a considerable part in Hitler's plan of campaign for 1940. One of the motives for the attack on Scandinavia was the desire to monopolize the Swedish ore, which is vital to Germany, not only because of its bulk but also because of its very high quality. Without the Swedish phosphoric ores to mix with her own low-grade ones, Germany cannot produce steel of satisfactory quality. By the Norwegian campaign, Hitler has ensured that no one else shall get any Swedish ore. He himself can get all he wants by the Baltic route in summer; it remains to be seen how much he will get in winter, when the only routes are through Narvik (which may not be repaired in time) and down the long Norwegian coast, open to British attacks, or else by rail through the whole length of Sweden.

In the West, however, Hitler has conquered the rich ore deposits of France and Luxemburg and gained access—though by land—to Spain. In fact, he now has all the iron ore he wants. He has, in addition, a steel-making capacity of over 40 million tons a year. His position is not yet perfect—coal will be a difficulty, and he lacks the ferro-alloys necessary for making special steels—but it is vastly improved.

Great Britain's steel-making capacity, on the other hand, has been adversely affected. In normal times, our chief sources of imported ore are Sweden, Spain, and North Africa. One of these sources is now definitely cut off while the other two are endangered. Fortunately, this is by no means as fatal to us as it would be to Germany, or as it would have been in the last war. In the last twenty years there has been a great growth in the use of scrap instead of pig iron and an extensive exploitation of our own domestic ores which, though not of high metal content, are not as low-grade as the German domestic ores. The result is that so long as we can import a few million tons of scrap from America, our steel industry can operate, if not at full capacity, at a high proportion of full capacity. And if this does not provide us with enough steel, we can import the finished metal from the United States, whose productive capacity is almost as large as that of the whole of Europe put together. We shall not, therefore, go short of steel. But we shall not have nearly as much as Hitler, and it would be a delusion to pretend that, in this respect, Hitler's conquest of France has not conferred a very substantial economic advantage on him and made a corresponding breach in our blockade.

4. *Other Metals.* There are so many important metals other than steel that to deal with them in any detail would require a very great deal of space. We must, therefore, generalize. Twelve metals can be selected as the most important. Seven of them are ferro-alloys—manganese, magnesite, nickel,

chrome, molybdenum, vanadium, tungsten. Five are non-ferrous metals—copper, lead, tin, zinc, aluminium. Of the twelve, Germany has really adequate supplies of only three—magnesite, aluminium, zinc. (Magnesite is, in fact, one of the very few examples of a material of which Germany, even at the start of the war, had a much larger supply than the Allies, since three-fifths of the world's output before the war was in Germany. It is used for producing light alloys; there is some production in Great Britain and Canada and some possibility of expansion.) The conquest of France has given Germany ample supplies of bauxite (the raw material of aluminium); and in another metal, manganese, she can get supplies in Europe which, with the greatest economy, might possibly suffice, and there are large deposits in French North Africa. There are also small supplies of copper and rather larger supplies of tungsten to be had from Spain and Portugal if the transport difficulties can be overcome. Of all the others, Germany is short; of some she is desperately short.

With the exception of magnesite, where a remedy is possible, Great Britain has access to supplies of all these metals, though all have to be imported by sea. Nearly all of them are found in adequate quantities in the British and French Empires. There may, however, in some cases, be a shortage of refining equipment which will limit the supply until it can be provided. In this connexion Norway and Holland are of importance. There is a considerable metal refining industry in those countries, based on imported ores. It is of no use to the Germans, since they cannot import the ores. Its loss to Great Britain will, however, cause us some inconvenience.

5. *Textiles.* Germany is short of all natural textiles except flax. Flax is grown in large quantities in the Baltic region, which is now accessible to Germany but not to the Allies. In the last war, flax was of great importance for making aeroplane fabric; but aircraft are now made of metal or wood, and though there are a number of miscellaneous war uses for linen, none of them can be classed as vital. Cotton and wool are the two most important war textiles. Germany has very little wool and virtually no possibility of access to any; she has no cotton at all, and the only supply to which she has any access is in Asiatic Russia. Jute (needed for sandbags) is virtually an Indian monopoly. Hemp and sisal are grown in Italy, Jugoslavia, and Roumania, but their export surplus is not enough to meet Germany's needs. Germany has, however, a very well-developed rayon industry and produces large quantities of staple fibre, which can sometimes be substituted for other textiles.

Except for flax, Great Britain has adequate supplies of all textiles.

6. *Oil.* Germany's oil position is obscure. The present supply can be estimated fairly closely. From her own crude petroleum and from the various synthetic plants erected to produce oil from coal, Ger-

many may at present be obtaining about 4 million tons of oil and oil products. From the three foreign sources open to her—Roumania, Russia, and Estonia—she is probably importing 2 million tons a year. Her present supplies are, therefore, about 6 million tons a year. The obscurity arises from the difficulty of estimating what her requirements are and how much supplies can be increased. In peace-time Germany and Czechoslovakia used about 7 million tons a year. It is possible that in the quiet conditions of the first six months of war, Germany's consumption of oil was no more, or perhaps even less, than in peace-time. Since May 10th it has certainly been greater, though it is difficult for a layman to guess how much larger; it is unlikely that the enormous figures that have appeared in the press—ranging up to 20 or 30 million tons a year—will be reached. As for increase of supplies, the synthetic production can be slowly increased, though it is limited by the difficulty of expanding coal production rapidly. It is unlikely that enough can be got from Roumania. Germany could get possession of the whole Roumanian output only if she can peacefully get control of Roumania itself (an armed attack would lead to the destruction of the wells); and even so the difficulties of transport from Roumania to Germany would set a limit to the amount that could be used. Transport may also be the deciding factor in the case of Russia, which will be further discussed below.

In summary, we can say that Germany has certainly not got enough oil to support a really active war. But the exact amount of the deficiency is difficult to establish. It would be as well to place no reliance on dramatic prophecies that shortage of oil will by itself bring Germany to her knees. On the other hand, the military events of May and June have unquestionably complicated Hitler's oil problem. He has conquered no new sources of oil, natural or synthetic; but he has made himself responsible for the oil needs of large countries such as France and Italy which previously were able to draw on the oil supplies of the outer world. Unless he can conquer the Near East Hitler is going to be very short of oil.

7. *Rubber.* In peace-time Germany and the countries she now controls imported well over 100,000 tons a year of crude rubber, apart from imports of goods made out of rubber. No natural rubber whatever is produced anywhere in Europe and, except for rubber that leaks through the blockade, Germany will not get a single ton. She has, however, developed in recent years the production of an artificial rubber called 'Buna' which, though very expensive and wasteful of labour and power in production, is said to have qualities superior, in some respects, to those of natural rubber. It is probable that enough 'Buna' is now being produced to cover half or perhaps rather more of Germany's requirements, and the amount can doubtless be expanded. But in rubber,

as in oil, the conquest of Western Europe has added to Germany's needs without adding to her supplies. There are ample supplies of rubber available to Great Britain.

8. *Timber.* In this respect, Germany is in a better position than Britain. She has considerable supplies of timber in her own territory or in her conquests, and she can get at further supplies in the Baltic region. Great Britain is in peace-time a heavy importer of wood and wood pulp from precisely these same countries, and the cutting off of supplies will cause grave inconvenience, especially in the production of paper for the newspapers. There are alternative supplies of timber on the other side of the Atlantic, but timber is such a very bulky material that the import of sufficient quantities would require a very large quantity of shipping. It is, of course, possible that the Baltic will be opened again for neutral shipping, though it is not likely so long as Germany holds Denmark; but on balance we are in a distinctly less favourable situation as regards timber than Germany.

We have now briefly surveyed the eight most important groups of war materials, and the time has come to bring the threads of the discussion together. In three of the eight categories—steel, coal, and timber—Germany is more or less adequately supplied. In the other five she suffers from a light or severe shortage. The military conquests of 1940 brought Hitler considerable accumulated stocks of materials and a solution of his steel problem; but with these exceptions—admittedly very important—Germany's economic position has been worsened by her military successes. One factor, however, has been omitted throughout the discussion. That is Russia, upon whose natural wealth the Nazis place many hopes. Can Russia save Germany from the blockade?

Soviet Russia undoubtedly produces many of the commodities in which Germany is deficient. Among the foods, she can supply cereals, but not much else. She makes steel, but uses all she makes. She has some of the other metals, notably the important manganese ore. She produces cotton, but has not hitherto exported any. Her production of oil has been rising; but her own need of oil has been rising even faster, owing chiefly to the increasing use of tractors in Russian agriculture. If we are to go by the statistics of what Russia has had available for sale in recent years, we should conclude that she could give little help to the Nazis. It would be idle, however, to deny that there are possibilities of development in German-Russian trade. The total production in Russia could be increased; and the Russian home demand could be restricted. But difficulties will also have to be surmounted. The chief of these is transport. Most of the commodities that Germany most wants from Russia are in parts of the country remote from the German frontier. The oil is in the Caucasus, on the frontiers of Turkey and Persia.

The grain is grown on the great plains of Southern Russia. The cotton is in Asia. To move large quantities of these goods to Germany will be a very difficult task. There is also the political factor. Does Stalin want Hitler to win so badly that he will deprive his own people, and weaken himself, to provide goods for Germany? If Russia devotes herself too exclusively to Germany, she runs the risk of being treated by Great Britain as an enemy, in which case she would need all her supplies for herself. If, on the other hand, Russia behaves as a genuine neutral, then Germany will have to share her resources with Great Britain.

Where, then, does this leave Germany—and us—in the next vital two years? Obviously, Germany will be short of many essential commodities. But those who expect the blockade to lead to a German collapse are deluding themselves. Extreme shortage of food might, conceivably, lead to a popular rising, the overthrow of the Nazis, and a plea for peace. But Germany is unlikely to be as short of food as that (unless there is a succession of very bad harvests in Europe). Shortage of other materials does not lead to surrender. What it does lead to is a limitation of the war effort. If Germany is short of materials, her armies do not stop fighting, but they fight at a severe disadvantage.

The importance of the blockade, then, is not that it will produce a collapse in Germany, but that it will set limits to the economic effort that Germany can make. If no such limits are set to her enemies' efforts, they have the chance to accumulate a superiority of power.

The blockade is thus not an excuse for any half-heartedness or procrastination in our own war effort. It is rather a reason for pushing on just as rapidly and effectively as we can. There are two limitations to the truth of the statement that time is on our side. One is that Russia *may* become a more and more powerful aid to Germany if we allow the Nazis more than two years or so. The other is that, even within the two years, time is on our side only if we use it to the full to turn raw materials into engines of war.

This chapter has shown that in most of the vital respects the raw materials available to us are much more plentiful than those to which Germany has access, even after her military successes. We have, however, assumed throughout the discussion that any materials in the British Empire and in other overseas countries are available to Great Britain. But before they can be used, they must first be bought and then shipped to our ports. These two conditions we are now about to examine.

But even when raw materials have been bought, paid for, and landed at our ports, they still have to be manufactured before they can be of use. The manufacturing capacity of Great Britain —the number of engineering shops and skilled workers—is not inferior to that of Germany, if our ability to draw on American industry is reckoned in.

If the men and the factories were, at the outbreak of war, in a lesser state of actual mobilization for war than those of Germany, that is a tribute to our lack of aggressive intention. But the imperative necessity now is to turn over as quickly as we can to the industry of war.

VI

CASH AND CARRY

[*Note.* Some parts of this chapter necessarily deal with technical matters, and may prove difficult for some readers, even though every effort has been made to keep them intelligible. These passages are printed in smaller type and may be omitted by those who are content with the main drift of the argument.]

THE details given in the last chapter are overwhelming proof of the enormous advantage we enjoy over the Germans through the access to the resources of the outer world that we enjoy. But access by itself is not enough. It is not sufficient merely to demonstrate that there are large supplies of the essential raw materials in America, Africa, or Asia. Before we can make use of them in the war, we must have money to pay for them and ships to carry them in. Neither of these two conditions can be by any means taken for granted; both require the most careful planning on the part of the authorities. The purpose of this chapter is to examine how we stand in respect of foreign assets and of ships and to set out the main outlines of a war-time policy.

This is not the place for a long dissertation on the principles of foreign exchange; but some understanding of the way in which foreign trade is financed in peace-time is necessary if the peculiar needs of war-time are to be appreciated. There are two basic facts that should be grasped. The first is that each country has its own national money, and that each national currency will buy goods only in its own country. British goods have got to be paid for in pounds, American goods in dollars, French goods in francs. An American manufacturer might accept pounds for his goods to oblige a customer, but only because he knows he can turn the pounds into dollars; it is dollars, with which he has to pay for his raw materials and pay his workers' wages, that he really wants. What this means is that if we in Great Britain want American or Argentine goods we have got to have dollars or pesos, or be able to acquire them, before we can make payment. The second basic fact is that, though one may loosely talk about 'converting' one currency into another, there is no way by which pounds can be converted into dollars as pigs are converted into bacon. Pounds can only be *exchanged* for dollars and an exchange implies the consent of two parties. Pounds cannot be exchanged for dollars unless somebody is willing to exchange dollars for pounds; and since pounds sterling are of value only in the United Kingdom, the only people who will want to exchange dollars for sterling are those who have some debt to discharge or some purchase to make in the United Kingdom. In short, we must have foreign currencies to be able to buy foreign goods; and the only way in which we can get foreign currencies (apart from any stock of them we may have accumulated, and apart also from the possibility of borrowing them) is by giving something of value or rendering some service in return. Moreover, the word 'foreign' must, in this context, be taken to include the countries of the Empire. They, too, have their own currencies, which are quite distinct from ours, even though some of them are called pounds. Australian farmers expect to be paid for their wheat and wool in Australian pounds, which we can only get hold of by a process of exchange.

The problem of payment for foreign goods is thus much more difficult than the problem of payment for goods produced in this country. When the Government has to pay for shells made in Sheffield, it can raise the money by taxation, by borrowing or, in the last resort, by printing it. But when it has to pay for American steel, the raising of the necessary funds by taxation, borrowing, or printing is only the first step; the Government must then seek to induce some holder of dollars to part with them in exchange for pounds, or else it must draw the dollars out of its accumulated reserves.

In peace-time there is a rough balance between the payments we make to other countries and the payments they make to us; the number of pounds *offered* in exchange for foreign currencies just about equals the number of pounds *wanted* in exchange for foreign currencies. In 1938, for instance, the process of exchange looked like this:

We *offered* pounds in exchange for foreign currencies in order to pay for—	(£ mill.)	Foreigners *wanted* pounds in exchange for their own currencies to pay for—	(£ mill.)
Our purchases of foreign goods valued at . .	938	Their purchases of our goods valued at	561
Payments made by the Government in foreign countries .	13	Various services rendered to them by us (shipping, insurance, &c.)	135
		Interest and dividends on capital lent by us to them in the past .	200
	951		896

There was, it will be seen, a difference of £55 millions, which we had to find out of our reserves, and though it was regrettable that we were thus drawing on reserves, the sum was small relatively to the total turnover.

This peace-time example will serve to illustrate the various ways in which we can possess ourselves of foreign currencies. They are five in number:

1. Selling our goods to foreigners.
2. Performing services for foreigners (so-called invisible exports).
3. Receiving interest on past loans.
4. Drawing on reserves of foreign assets.
5. Borrowing foreign currency from foreigners.

A word of explanation should be said about the meaning of 'reserves of foreign assets'. The most obvious form that these reserves can take is a stock of foreign currency—that is, balances standing to our credit in foreign banks. But anything that can be readily turned into foreign currency will do as well. Thus shares in American companies, which can be sold on the New York Stock Exchange, form an important part of our reserves. And there is also gold. Although most countries in the world have left the gold standard (that is, they no longer undertake to buy gold at a *fixed* price) they are all (or at least the important ones) ready to buy gold at *some* price. We cannot be sure exactly how many dollars our gold can be sold for; but we are reasonably sure that it can be sold for *some* amount of dollars. Gold is therefore to be counted in our reserves.

Before proceeding to examine the five ways of obtaining foreign currency, one by one, we must first ask how much foreign currency we are likely to require. Will it be more or less than the £951 millions worth that was needed in 1938? We can, of course, reduce our need by cutting off every unnecessary import, and this is being done by the method of prohibiting entirely certain classes of imports and subjecting others to control by licence. But, unfortunately, most of our imports are necessary and if we restrict them we shall be restricting our war effort. All sorts of raw materials are needed in larger quantities—some of them in enormously larger quantities—than in peace-time. Food imports cannot be reduced beyond a certain point without the danger of starvation. And we need large quantities of very expensive manufactured articles, such as American aircraft. Moreover, the things that we need most are precisely those things that everybody else needs most; price increases can hardly be avoided. And, finally, with every man sent abroad and every ship dispatched to a foreign station, the Government's expenses in foreign countries increase. For all these reasons, it can be taken as certain that our war-time requirements of foreign currencies are much higher than our peace-time requirements. Moreover, the more we take advantage of the superiority over Germany that our access to the world's supplies represents, the greater will be our requirement of foreign currencies. It is impossible to put a figure on our war-time need of foreign currencies, but it will be very large.

Let us now examine the five possible methods of obtaining the foreign currencies we need. It will be convenient to read from bottom to top of the list, and to start with the possibility of borrowing them.

We may be able to borrow some foreign currency in the course of this war. One source of such borrowings will be the Dominions, and the way in which they will lend us their currencies will probably not be by formal loans (though they should not be excluded) but by being willing to take payment for part of their supplies to us in sterling, which they will leave on deposit in London, rather than in their own currencies. This is, in effect, a loan of their currencies to us, for what it means is that the Australian wheat farmer is paid for his wheat in Australian pounds by his own Government, which is content to accept sterling in return. But the Dominion Governments will not be able or willing to pay out unlimited sums in their own currency in return for sterling that has to be left in London. There is not a very great deal that can be borrowed in this way.

In the last war much the biggest source of borrowings was the United States. We should be in a very much better position in this war if we could once more borrow in America. But any such loans—or even ordinary trade credit—are prohibited by two American laws—the Johnson Act, which prohibits loans to War Debt defaulters, and the Neutrality Act, which prohibits loans to belligerents. Unless or until these laws are amended or repealed, we shall be unable to borrow dollars.

Our prospects of borrowing are thus doubtful. Indeed, we may find that, as in the last war, we are compelled to lend more to our Allies than we ourselves borrow. This is not, however, as serious as it sounds, for though borrowing from abroad would be a net addition to our foreign currency resources, lending to our Allies is not a reduction in those resources, since we lend them pounds to spend in Great Britain. Nevertheless, it is safest to conclude that, in this war, we cannot expect any assistance from borrowing.

The next way of securing foreign currencies is by drawing upon our stock of foreign assets, which can best be regarded as consisting of three categories—deposits in foreign banks, gold, and foreign investments. At the outbreak of the war the Government took steps to concentrate the whole of these assets in its own hands. The Bank of England's gold was sold to the Government; all institutions and individuals were instructed to hand over any foreign bank deposits they might own, and were given pounds in exchange; owners of foreign securities had to register their holdings, which are gradually being bought by the Government. There are no estimates of the amount of foreign bank deposits belonging to British residents; but some idea of the size of the two other constituents can be given. On 31 March 1939 the gold held by the Bank of England and the Treasury together amounted to almost 80 million ounces, worth £560 millions at the price of gold then prevailing and £672 millions at the war-time value. Not all of this was still in the country when war broke out, but the gold reserve was clearly very large. As for foreign investments, the annual income from them is estimated to be £200 millions, so that at twenty years' purchase their capital value would be as much as £4,000 millions.

Unfortunately, nothing like this sum could be made available. Many of our investments are fixed and hardly saleable; few of them could be quickly realized on a public market. This complicates the task of estimating how much foreign currency could in fact be provided out of our assets. Perhaps the simplest rule-of-thumb method of making an estimate is to take our assets in the United States alone *plus* the gold reserve. The justification for this is that United States dollars are the form of foreign currency we most need, and that our American investments are easily the most saleable we have. By making the estimate in this way we are including those investments in America that could *not* be sold (called 'direct investments' in the table on p. 84); but we are excluding those investments in other countries that *could* be sold; and we may guess that the two categories roughly offset each other.

The following figures (which are taken from the official *Bulletin* of the United States Federal Reserve Board) may therefore be taken as a rough indication of the size of the reserve of foreign assets that could actually be drawn upon (the German figure is given as a matter of interest; this money cannot be used by the Nazis to buy goods, since the goods would be stopped by the British blockade, but it can be used to finance propaganda in America. French balances in the United States have been blocked by the American Government and the presumption is that they will not be made available to the Germans):

(*Figures in millions of dollars*)

	United Kingdom	*France*	*Canada*	*Other British and French countries*	*Germany*
Gold . . .	2,000	3,000	215	540	150
Dollar bank balances	595	315	355	. .	10
Marketable securities	735	185	500	. .	. .
Direct investments .	900	80	560	. .	. .
Total . .	4,230	3,580	1,630	540	160
£ equivalent (millions) . .	1,057	895	407	135	40

These are very substantial sums of money; but they do not look so large when placed alongside the probable requirements of foreign currency. In 1938, though the United Kingdom only drew £55 millions out of its reserves, its total requirement of foreign currency was nearly £1,000 millions and the figure will be considerably higher in war-time. If our liquid reserves have to be drawn upon at the rate of £300 millions a year, they will have vanished in three years.

Clearly, though these reserves will be of *some* help, they cannot be relied upon to solve the problem by themselves. Moreover, an exhaustion of our reserves is not a course of action that should be lightheartedly undertaken; it would leave us permanently weaker in a strategic sense and poorer by the loss of the valuable income these assets now bring in. The course of wisdom would be to keep these reserves as reserves, to draw on them as scantily as possible, and try to meet our requirements of foreign currencies by other means.

Meanwhile, it is to the obvious interest of the country that, if the reserves are drawn on, it should be for a useful and necessary purpose. Indeed, since foreign currencies are so scarce, no unnecessary demands for them should be permitted. This can be done in part by the rigid control of imports already mentioned. But payment for goods imported is not the only purpose for which the individual may wish, in peace-time, to buy dollars. He may wish to invest his fortune in America rather than in England or to speculate on the New York Stock Exchange. The purpose of the exchange control regulations is to prevent any such unnecessary use of the scanty supply of dollars. No resident in Great Britain may now, by law, buy foreign currencies (or, more strictly, the more important foreign currencies) except from the Bank of England, and the Bank will not sell to him unless the foreign currency is wanted for an approved purpose. These regulations do not apply to foreigners; they are not prevented from offering their pounds in exchange for dollars and other foreign currencies. But they cannot sell their pounds through the

Bank of England at the fixed official rate; they have to have recourse to the so-called 'free' market, where the value of their pounds is less. It is urged by some people that these foreign owners of pounds should be prevented from selling them, except for purposes approved by the British authorities. If this were done, it would diminish the drain on our total supply of foreign currencies, but the world's confidence in London as an international banking centre (from which we draw a handsome income in time of peace) might be shattered if foreigners could not get their money out. At the time these lines are written, this is still an unresolved controversy, though events are compelling the British authorities to resort to ever more restrictive measures.

The only remaining means of obtaining foreign currency are those numbered 1, 2, and 3 in the list on page 79. And of these three, two can quickly be disposed of. There is very little chance during the war of increasing our receipts of dividends and interest. Clearly we cannot now add to our foreign investments; indeed, we have just been discussing making drafts upon them. It is possible that some of our debtors will be more prosperous; defaults may be ended and dividends may be increased. But it would be optimistic to look for more than a small sum from this source. Our earnings from the rendering of services to foreigners are almost certain to decline in war-time. Much the largest service item is the money earned by British shipping in carrying foreign goods. But British ships, as we shall shortly see, will be very fully engaged during the war in carrying our own goods and their income from foreigners will inevitably fall. War-time dislocations and restrictions in the City of London are also likely to reduce our income from banking commissions, insurance premiums, and the like.

There remains only the export of goods, and clearly this is not going to be easy, when labour and materials are short. Nevertheless it is the only means we have of increasing our supply of foreign currencies, other than a draft on reserves, which should be avoided as far as possible. It is easy to appreciate why the utmost importance is being attached to the stimulation of exports.

Before the methods of stimulating exports are described, an important distinction must be drawn. We have hitherto been speaking of foreign currencies as if they were all alike. But this is not so; there are, in fact, three sorts of foreign currencies, which we can call 'hard', 'soft', and 'sterling-area'. The hard currencies are, broadly speaking, those we want most and find it hardest to acquire. The chief of the hard currencies is, of course, the United States dollar. The soft currencies are those belonging to countries with whom trade is more or less on a barter basis. The importance of the distinction is this: if we buy too much from a 'hard' country, we shall have to pay by drawing on our reserves; if we buy too much from a 'soft' country, it must either take payment in goods or not at all. 'Sterling-area' currencies come between 'hard' and 'soft'; trade with these countries—chiefly the British Dominions—is not on a barter basis, but since they keep their reserves in sterling, they may be more willing to take payment in sterling. These distinctions complicate policy; for while all unnecessary imports should be stopped, it is most essential to cut down those that come from 'hard' countries, and while exports to all countries should be stimulated, it is most necessary to stimulate them to 'hard' countries.

There are two ways in which the war might be thought to help our exporters. First, it creates an enormous demand for almost everything, especially for the things that an industrial country can provide. Belligerents, intending belligerents, and threatened neutrals are busy equipping themselves; even neutrals remote from the conflict are anxious to build up stocks of their requirements before communications are interrupted or prices rise. Secondly, Germany, in peace-time the world's third largest exporter, is cut off from a large part of her markets, which are open for others to occupy. But against these advantages there are serious disadvantages. Exporters have difficulty in getting materials, labour is scarce, delivery dates cannot be guaranteed, changes in the cost of materials make it difficult to quote firm prices. The temptation to neglect export business and concentrate on satisfying the infinite demands of the Government, with profit guaranteed, must be very strong.

Nevertheless, it is vital that exports should be increased to the utmost possible extent and the Export Council has been formed to undertake this duty. Its earliest endeavours were directed towards securing an ample supply of materials for export industries and, though the fighting forces must take precedence, the principle has been laid down that exports will be served before the demands of the home population. The next task is to ensure a labour supply at a reasonable cost. The Government can also assist exporters to quote prices without having to alter them later, and to get shipping to carry their goods. If this does not succeed in providing a sufficient production of goods for export, then it may be necessary to impose upon every industry the duty of making a certain quota of goods for foreign sale. And behind all these devices is the possibility that, if costs of production rise too fast, exporters may have to be assisted out of public funds to retain their markets. This is an expedient that needs to be used with great care, for it is obviously in our interest to keep the prices of what we sell as high as they can be pushed without killing the trade. But if assistance from the Exchequer will be the means of bringing in more foreign currency, then it should be given. The ordinary criteria of private accountancy do not apply in war-time. Naturally, we want to make as much as we can by our exports; but it would be well worth while taking a loss in pounds (which we can create, if need be) if thereby we can make a greater gain in dollars (which we cannot acquire by any other means).

Whatever the precise methods, however, it is essential that our exports should be expanded. In allocating labour and war materials to the export industries—even to those that manufacture luxuries—they should not be regarded as rivals to the munitions industries. They *are* munitions industries at only one remove. They earn for us the foreign currencies without which we shall be unable to realize our capital advantage of having access to the material resources of the whole wide world.

Ships

The other essential is adequate shipping capacity. Having provided the cash, we must next carry the goods.

As in so many other questions, the only possible starting-point for an examination of our shipping problem is to compare it at the outbreak of this war with what it was in 1914. We know that, in spite of very heavy losses from submarine attacks, we just managed to get through the last war without having to starve the people or abandon any military enterprise. To compare the number of ships we started with, and the rate at which we have been losing them, with the experience of the last war will give us a first view of our position.

The figures of merchant shipping in 1914 and 1939 are given in the table on page 91. These figures need a word or two of explanation. The merchant fleets of Norway, Holland, and Belgium have been included in the Allied total, since the bulk of them are now available to us (the ships which the Germans found at their home ports at the time of their invasions of Scandinavia and the Low Countries are not available to us; but they can be regarded as offset by the German shipping we have captured). The merchant fleets of France and Denmark are in a slightly different position, as their Governments, under German pressure, do not approve of their being used in our service; but in fact the bulk of Danish and French shipping may well be available to us. The distinction between the United States and other neutrals is made because American ships are prohibited by law from approaching the 'combat area' and cannot therefore be hired by us.

	Number of ships		*Tonnage*	
	1914	*1939*	*1914*	*1939*
United Kingdom .	8,587	6,722	18,892,089	17,891,134
British Dominions and Colonies .	1,536	2,255	1,631,617	3,110,791
Total British .	*10,123*	*8,977*	*20,523,706*	*21,001,925*
Norway. . .	1,656	1,987	1,957,353	4,833,813
Holland . .	709	1,523	1,471,710	2,969,578
Belgium . .	159	200	269,000	408,418
Total Allied .	*12,647*	*12,687*	*24,221,769*	*29,213,734*
France . . .	1,025	1,231	1,922,286	2,933,933
Denmark . .	576	705	770,430	1,174,944
Total of above .	*14,248*	*14,623*	*26,914,485*	*33,322,611*
Other neutrals (exc. U.S.A.) . .	5,777	8,601	7,636,848	15,917,822
U.S.A.* . .	1,113	2,345	2,026,908	8,909,892

* Excluding lake shipping.

Other neutral ships can be hired, though at rates much higher than we grant to our own shipowners.

On the whole, the picture presented by these figures is reassuring. Great Britain herself has rather fewer ships in number than before the last war, but in tonnage the difference is very small. And the merchant fleets of the Dominions and of the Allies (some of whom were not Allies in the last war) are all considerably larger than twenty-five years ago. There is also a larger tonnage of neutral shipping that we can hire if we can pay for it. Moreover, there is another factor that is not revealed in the figures. The average speed of the world's shipping is greater than it was in the last war. The weight of goods that a 10,000-ton ship can carry in a year is thus larger than before.

In one of the two essential factors—the pre-war supply of shipping space—we are therefore at least no worse off, and probably slightly better off, than at the outset of the war of 1914–18. The other essential factor is the volume of our losses of ships through enemy action. In the first six months of this war about 650,000 tons of British[1] ships were sunk. In the first six months of the last war only about 270,000 tons were sunk. But this comparison is misleading, because in the first six months of the war of 1914–18 there were no submarine attacks on merchant ships, while since September 1939 the enemy has been trying every device to blockade our coasts. The fairer comparison is with the *average* rate of sinking throughout the whole of the war of 1914–18. This was at the rate of about 200,000 tons a month, compared with a rate of about 110,000 tons a month in this war. It is, of course, possible that the enemy may succeed in increasing this rate of sinking; but he has already tried out the whole of his armoury—torpedoes, mines, and bombs. The only method of attack that he has not tried is air raids on the ports themselves, and it may be that his bombers, together with his possession of the French Channel ports, may result in our being faced with a port problem that will be harder to solve than the shipping problem itself. But subject to this, we can say that our shipping position will remain more favourable than it was in the last war. (Another factor that should not be forgotten is our capacity to build ships while the war is on. The shipyards of Great Britain are probably capable of building 100,000 tons of merchant shipping a month when the campaign to increase shipbuilding, which has already been started, reaches its height.)

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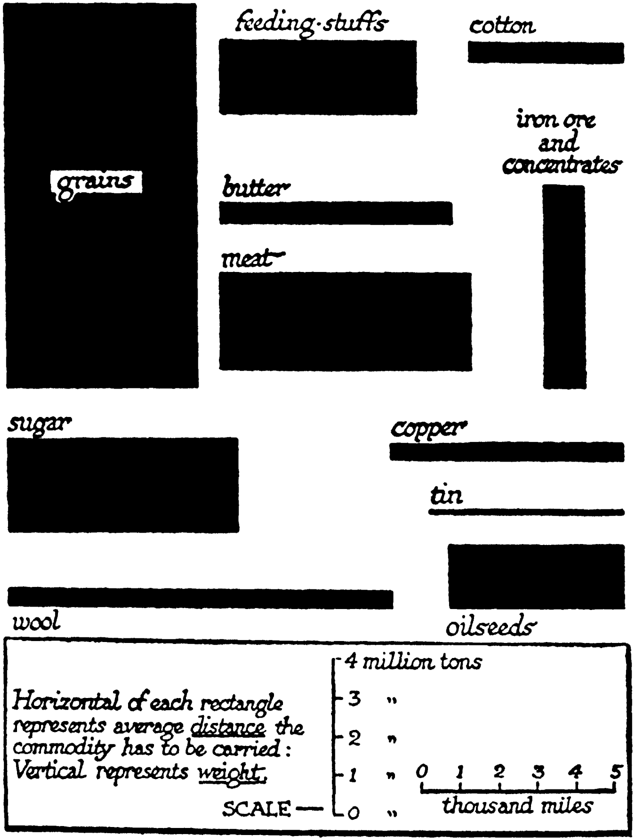
[1] It is difficult to quote figures for the neutrals on a fair basis. Their losses, especially those of the Danes and Norwegians, have been very heavy. But this has chiefly been because they failed to take advantage of the British convoy system. Now that they are operating under our control, their rate of loss can be expected to be the same as ours.

To say that the volume of shipping capacity available is now, and seems likely to remain, rather greater than in the last war is not by any means the same thing as saying that there is no shipping problem. On the contrary, the problem is severe and requires drastic methods. For one thing, the weight of goods we need to import has gone up since the last war. The population is larger and therefore needs more imported food and the equipment required for the fighting forces has also increased. Relatively to what we need, we may be no better off than last time. And in any case, whether or not we are better off than in the last war, we are much worse off than in peace-time. The tonnage of imports that can be carried in our merchant ships is much less in war than in peace. For one thing, a large amount of shipping was needed, and may be needed again, to carry the men of any expeditionary forces that we send overseas and to keep them supplied. Ships are needed to act as auxiliaries to the Navy, to sweep for mines, and so forth. And those that remain have to move in convoy, which is a most time-wasting proceeding. Ships have to wait until the convoy is formed, then all have to move at the pace of the slowest and, since all arrive together, more time is wasted through congestion at the ports. Some idea of the way in which the possible maximum of imports is reduced can be got from the last war. In 1913 the weight of imports into the United Kingdom was 52¾ million tons; in 1917 it was 34½ million tons—a reduction of nearly 35 per cent. The tonnage of shipping available had meanwhile been reduced by not much more than 20 per cent.

It is probable that, even without any sinkings of



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ships by the enemy, the tonnage of imports that can be brought into this country during the war will only be about three-quarters of what it was when the war broke out. Hence there is the most urgent necessity to cut down the various categories of goods and the bulkiest will inevitably, other things being equal, be the first to go. In the last war the imports of timber (the heaviest single item in 1913) were cut down from 11½ million tons to 3 million tons, while imports of paper were reduced to less than a third of the pre-war amount.

To speak in terms of tons, however, gives only a poor idea of the amount of dislocation of trade that takes place. Different commodities come different distances and the demand they place on shipping capacity is a product of weight and distance. The diagram on page 95 is a rough attempt to demonstrate this. By *weight* our imports of iron ore are twice those of meat. But they need only a fraction of the shipping to carry them. It therefore becomes necessary to single out for drastic reduction not only the heavy items but also those that come a long way.

There is an obvious possibility of a clash of interests between the control of imports for the purpose of economizing shipping and control for the purpose of economizing foreign currency reserves. From the shipping point of view, it would be an advantage to get as much as possible from the United States, since the sea voyage is comparatively short. From the foreign currency standpoint, it is essential to cut down imports from the United States as far as possible. This contradiction poses some pretty problems which have to be worked out between the Treasury and the Ministries of Supply, Food, and Shipping. There is no general principle that can be laid down, except that it is an obvious advantage to us to buy as much as we can from countries that are both 'soft' from the currency point of view and also comparatively close. Spain, Portugal, and some of the South American countries answer this description; unfortunately their resources are limited.

With problems of this difficulty to be solved, it is obvious that the tightest control has to be maintained over the shipping available in order to ensure that the utmost use is made of every ton of carrying capacity. The principles of shipping management in war-time are entirely different from those of peace. In normal times some ships are built to carry light and bulky cargoes, others small and heavy cargoes. In war-time, the latter grow in importance and many of the former class of ships have to be transferred from their usual trade. Ships have to be sent into waters where they never previously sailed; they have to carry cargoes for which they were never intended. Both in the war of 1914–18 and in this war it has been found that the only way of making certain that the ships are used to the best purpose is for the Government to requisition them and, while leaving the owners to find the crews and attend to the detailed management, take over the whole business of determining which ship shall carry which cargo from which port.

What is the final conclusion of this long examination of the twin problems of cash and carry? It is that we are not prevented, either by lack of foreign currency or by lack of ships, from exploiting our access to the world's resources. Our apparent advantage over Germany is a real one. But there are limits. We cannot pay for unlimited imports, nor can we carry them. In fact, we shall not be able to get imports of much more than the pre-war *value* or of more than three-quarters the pre-war *volume*—and we shall only be able to do as much as this by stimulating our exports to the utmost and by defeating the submarine, the minelayer, and the raider. If our imports are thus limited and we still want to have vastly larger quantities of the implements of war than the enemy has, it follows with inescapable logic that all imports that have nothing to do with munitions must be cut to the bone. Anything that can be done without (American motor-cars, for example) must be done without completely; and even necessaries must be severely reduced.

Much the heaviest and most valuable of non-munition imports are foodstuffs for human beings and animals. In peace-time they make up between 30 and 40 per cent., by weight, of our total imports. When all unnecessary imports have been cut off, food and munitions are the two great competitive bidders for shipping space. To win the war, we must bring in larger quantities of the raw materials of war than Germany can get hold of; we must also do what she cannot do at all—import finished munitions. But if we are to do this, the space available for food will be less.

We must therefore now examine the question of food. So long as the shipping position does not get much worse than it is now, it will be *possible* to import food in virtually the pre-war amounts. But it will be possible only by stinting our supplies of munitions, war material, and raw commodities for the munition industries. Thus though a restriction of food imports may not be forced upon us by an absolute shortage of ships, it is imposed upon us by the imperative necessity of giving the winning of the war a first call on our ships as on all other resources.

VII

FOOD SUPPLY

THERE are two reasons why it is necessary for the Government of a nation at war to exercise a close control over food supplies. The first is because there may be a shortage of food in general and there is almost certain to be a shortage of some particular varieties of food. This shortage may arise because supplies are cut off (the German case) or because it is expedient to release a larger proportion of a restricted supply of shipping space for carrying munitions and raw materials (the British case). In either case there is a shortage of some or all kinds of food. The first reason for control is, therefore, to ensure that the shortage shall not lead to starvation. The second reason is to avoid all the social and economic evils that would follow from a serious rise in food prices.

In the last war neither of these necessities was realized for two years or more. Until 1916, food supplies remained more or less as usual, with the exceptions of sugar and wheat, and it was not until late in that year and early in 1917 that the German submarine campaign brought home the possibility of a serious shortage. As for rises in prices, they were thought to be the normal way of dealing with a slight shortage. Insufficient attention was then paid to the fact that, though a rise in prices chokes off demand, it does so in a very unfair way. The disadvantages of price rises as a method of reducing consumption will be discussed in the course of Chapter IX; it is enough for the moment to say that the experience of 1914–18 left behind it an almost unanimous opinion that any other method was preferable.

War-time food policy thus comprises two problems—that of ensuring a supply of food, and that of distributing it to the population.

The supply problem arises from the fact that Great Britain only produces, in peace-time, a fraction of the food its human and animal population consumes. Just exactly what the fraction is depends upon whether it is calculated in terms of weight, money value, or food value. In weight, which is what concerns us most vitally at the moment, about 43½ per cent. of the total supply is home-produced and 56½ per cent. imported. The diagram on the next page shows the proportionate weight of the different classes of foodstuffs that are home-produced and imported.[1] The size of the rectangles on the right-hand side of the dividing line shows, approximately, the shipping required to bring in the different foods. (This can only be told approximately because of the different distances that different items have to be brought; compare the diagram on page 95.)

In money value or in food value, the home-produced proportion would undoubtedly be higher, since it is the higher-priced and more nutritive foods, such as meat, milk, eggs, and vegetables on which British agriculture has concentrated. But the essential and fundamental difference between the problem of food supply in peace and in war is that money value, which is the dominant consideration in peace, matters hardly at all in war. Food value matters a great deal, as we shall shortly see. But the dominant factor in war-time is weight. There would be no food problem if it were not for the difficulty of bringing in the pre-war weight of imports, and what

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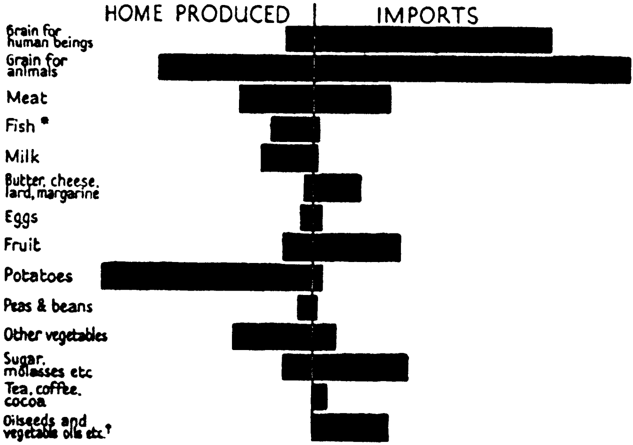
[1] The diagram is drawn from figures in the *Report of the Food (Defence Plans) Department of the Board of Trade for the year 1937*. The figures refer to the average of 1934, 1935, and 1936.



* 'Home-produced' fish is that caught by British boats.

† Some of these are used in making margarine and have already been counted; but the bulk goes into cake for live stock.

matters for the solution of the shipping problem is not the value but the weight of the goods that have to be carried. (Their value matters to the foreign currency problem; but most foods come from 'soft' or sterling-area countries.)

The first item in a war-time food policy is, then, to reduce the *weight* of imports of food. And it is obvious from the diagram that, if imports are to be reduced, the first attack must come upon grain. The only other items that are large enough to make a contribution are meat, dairy produce, fruit, sugar, and oilseeds.

If imports are to be cut down, it is only sensible to cut down first those for which the home-produced supply can be increased, and this leads us directly to a consideration of the part that British agriculture has to play. For all save the last eight years, British agriculture has been left without protection against foreign competition. This is not the place to discuss whether or not that was the best policy that could have been pursued. It must not, however, be thought that it has left us in a wholly disadvantageous position in time of war. The disadvantage of depending upon imported food is obvious; but the offsetting advantage was pointed out in Chapter IV, where it was shown that this method of obtaining our food provides us with millions of man-power to spare.

The obvious consequence of an unprotected agriculture has been that British farmers have tended to concentrate on producing those forms of food which provide the greatest cash return per acre. This is by no means synonymous with the greatest quantity of food per acre. Indeed, it often turns out to mean the opposite. Thus the branch of farming which has, by and large, paid best in this country in recent years has been the production of milk and meat on pastures, while corn-growing has, until the subsidy of recent years, been steadily declining. But an acre of corn has five times the food value of an acre of even the finest pasture. The following table[1] (which dates back to the last war but is still roughly true at least in its proportions) shows the number of people

Crop	*Edible products*	*Persons maintained per 100 acres*
Wheat	Bread; beef, pork	208
Oats	Meal; beef, pork	172
Potatoes	Vegetable; pork	418
Mangolds	Beef	28
,, ...	Milk	117
Swedes and turnips . . .	Beef and mutton	20
'Seeds' hay	,, ,,	13
Meadow hay	,, ,,	12
Finest pastures . . .	Fat beef and mutton	40
Poorest cultivated pastures .	Very lean beef and mutton	1
Average meat-producing pasture	Beef and mutton	9
Average milk-producing pasture	Milk	41

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[1] Taken from *Food Production in War*, by Sir Thomas H. Middleton, p. 83 (Oxford: The Clarendon Press, 1923). Sir Thomas Middleton points out that no one can live on one food alone. To say that 100 acres of wheat will supply 208 persons really means that it will supply one-fifth of the food requirements of five times that number of people.

who could be maintained for a year on 100 acres growing different crops.

These variations are enormous, and it is obvious that an agriculture governed by food value per acre (the proper criterion for war) will grow the different crops in very different proportions from one governed by money value per acre (the inevitable criterion of peace). In particular, a war agriculture must grow much more wheat, oats, and roots and have fewer pastures than a peace agriculture. The first object of agricultural policy in the last war and in this has therefore been to induce farmers to plough up some of their grass-land.

It so happens that a turnover from live-stock farming to the growing of wheat and potatoes is just what is needed to provide the greatest relief to the shipping problem. This relief can occur in three separate ways. First, there is the direct substitution of home-grown wheat for foreign wheat, where the benefit is obvious. Second, there is the possibility of a heavier crop of potatoes. Since we already provide virtually the whole of our consumption of potatoes, it might seem that there is no demand for a higher production. But, as in the last war, a certain proportion of potato flour can be mixed with wheat flour in the loaf; the consumption of potatoes went up from 3·67 lb. per week per head in 1909–13 to 5·26 lb. in 1918. Thirdly—perhaps most importantly—if fewer live stock are raised, fewer grains and oil-seeds have to be brought in to feed them.

The most helpful form of economy in food consumption is therefore in meat. If the public eats less *imported* meat, it is economizing directly in shipping. If it eats less home-produced meat, it is helping in two ways: it is saving the shipping that would have to bring the feeding-stuffs, and it is (directly or indirectly) releasing land in Great Britain for growing wheat and potatoes. Meat, however, is full of paradoxes. Contrary to other foods, it saves shipping to *increase* the proportion of the total supply that is imported, since 100 lb. of meat weighs much less than the feeding-stuffs necessary to produce the same weight of meat at home. Again, a decision to reduce the scale of stockbreeding *increases* the supply of meat for a time, since it leads to an increased rate of slaughter. We came across this phenomenon in Chapter V in the case of Germany. We shall also have it, though on a smaller scale, in this country if we pursue a logical policy.

The main line of agricultural policy in war-time must therefore be to reduce the number of live stock (except milch cows and mountain sheep—the former because they are necessary, the latter because they live off land that cannot produce anything else) and to increase the production of wheat, oats, roots, and vegetables. For the first nine months of the war, the Government's policy followed the second half of this policy: farmers were encouraged by a subsidy to plough their grass-land and, if necessary, they could be compelled to do so. But the necessity for the first half of the policy was not recognized until the beginning of June 1940, when a deliberate policy of reducing the numbers of pigs and poultry was adopted. At the same time, steps were taken to increase the supply of farm labour both by a radical increase in wages and by a degree of conscription. But there is still an insufficient degree of direction to farmers on the use to be made of their land. The method of carrying out the agricultural policy is through County Agricultural Committees, composed of farmers, and though this has the advantage of securing the goodwill of the farmers, enlisting their local knowledge, and avoiding the charge of 'farming from Whitehall', it will, later in the war, suffer from the serious disadvantage that it cannot be used for any policy that farmers do not like. It is an unfortunate fact that some of the things that will have to be done if we are to make the best use of our land will be distinctly unpleasant for the farmers. They have the right to a decent living during the war and assistance after the war in getting back to the sort of farming that will pay them best at that time. But in return they will have to be called upon to grow what they are told to grow, since the decision must be based on considerations too complicated and too far removed from ordinary practice to be within the competence of the individual farmer or even of a County Agricultural Committee.

This is the first half of the problem of food supply—

the production end. The distribution end is the business of the Ministry of Food and is so completely associated in the public mind (both in the experience of this war and in the recollection of the last) with ration cards that it is something of a shock to recall that national rationing was not instituted in the last war for any commodity until January 1918, and that national rationing did not start until only four months before the Armistice.[1] The fact that 'food control' now means, to most people, 'rationing' is a tribute to its success.

At first sight, the obvious article to ration is bread, since a reduction in its consumption would cause a direct saving in the largest item of imports. But it was held in the last war, and is held again in this war, that the social importance of bread, and particularly the fact that it is the poor man's standby, made it undesirable to impose any restriction on it. Bread, therefore, remains unrationed and the power to eat more bread is a safety-valve for the whole system of food control.

In the last war, rationing hardly reduced at all the total consumption of food. Actually, the British people ate virtually as much in 1918 as in 1914, though of rather different things. Consumption of butcher's meat, butter, and sugar went down; that of flour, bacon and ham, margarine, lard, and potatoes went up. In terms of food value, the average number of calories per day was 3,442 in 1909–13 and 3,358 in 1918. Rationing *could* have been used to reduce the total consumption of food; actually it served two other purposes, keeping prices down and changing the nature of food consumption. Though there was no shortage of food in general, there were shortages of certain varieties of food, notably sugar and butter. In the early years of the war these shortages were dealt with by rising prices, which meant that the rich got what they wanted and the poor did not. When a public outcry followed, maximum prices were fixed; but since the amount that people wanted at these prices was more than the amount that was available, the result was queues. The only change was that it was those who had time rather than money to spare who got what they wanted; the rest went without. Rationing is the only method that enables a short supply to be fairly distributed at reasonable prices. The other purpose of rationing—compelling people to change the nature of their consumption—is the necessary counterpart of the problems of food production that were discussed earlier in this chapter. Just as the farmers will have to be compelled to grow the sorts of food that best fit in with the general plan, so the public will have to be compelled to change its eating habits, to eat more potatoes, milk, and oatmeal and less meat and wheat. By these means we shall be able to release the vital shipping space for the import of materials of war, even though our total consumption of food is not diminished.

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[1] This and other facts in this chapter relating to food control in the war of 1914–18 are taken from Sir William Beveridge's book *British Food Control* (Oxford, 1928).

Is this enough? Shall we be able to maintain the quantity, if not the present variety, of our food consumption? It might be rash to assume that the task of food control is thus limited. For one thing, a worsening of the shipping position may make a reduction of food consumption inevitable; it is probable that it would have been necessary in 1919 if the last war had continued into that year, because of the strain imposed on Allied shipping by the transport of the American Army and its supplies. And secondly, a restriction of food consumption may be desirable, not because it is unavoidable, but in pursuance of the general war-time necessity for cutting down all forms of civil expenditure in order to set resources of men and materials free for war purposes.

But if that is decided to be necessary, it will not be because of anything arising out of the problems of food production and distribution but out of the general economic problem of bearing the cost of the war. Its discussion belongs, in fact, not to this chapter but to the next.

VIII

THE COST OF THE WAR

WHAT will be the cost of the war? The answer can only be given in money terms, since money is the only way of bringing together such diverse elements as the wages of soldiers, tons of steel and gallons of petrol, yards of cloth and thousands of boots and all the rest of the requirements of war. In Chapter X an estimate will be attempted of the money cost of this war. But though money is the only way of measuring the cost of war, it is only a measure. It is not the real cost; it merely stands for the man-power and the materials that have gone to the business of fighting. So in this chapter, before we turn to the financial problems, we must first get some idea of the reality that lies behind financial figures. Money, after all, can be created; men cannot be created and materials are scarce. To devote them to the hateful and unproductive uses of war is the real cost it imposes on the community.

Many of the costs and sacrifices of war cannot be estimated. We cannot put a value on lives thrown away or on happiness ruined. We cannot assess the worth of twisted souls and tortured consciences. We cannot fix the damages incurred by interrupting the education of our children or by depriving them of a normal healthy development. We do not know the price of leisure abandoned, of peace of mind destroyed or of health overstrained. As citizens we must not ignore these things; but an economist is necessarily restricted to things on which a monetary value can be placed. He does not depreciate or undervalue the other, less definable, things; but since he cannot measure them, he is forced to leave them aside. At present, then, we are concerned with the *real economic* cost of the war. In Chapter X we shall estimate its size, and we shall have to use the measurement of money value for the purpose. But first, in this chapter and the next, there are a few questions to discuss about the *nature* of the real economic cost of war and—more particularly—about the way in which it should be distributed.

The essential economic task of war, as has been insisted in nearly every chapter of this book, is to take a large part of the nation's resources in man-power, in manufacturing capacity, and in raw materials away from their normal task of providing for the needs of the people and set them to the task of fighting the enemy, either in the actual firing-line or in producing munitions and equipment for the troops. Men and materials are taken away from *useful* production—that is, maintaining and increasing the standard of living of the people—and set to production that is useless save for the destructive purposes of war itself. The more men and materials can be released from useful purposes, the more will be available for war; and since the demands of war are unlimited, it follows that the task of a nation at war is to cut its normal, peaceful, useful consumption to a minimum—to reduce the standard of living, for the duration, to rock bottom. The difference between this rock bottom standard of living and the standard of living the nation would otherwise have enjoyed is the real cost of the war. It is represented by the necessaries, the semi-luxuries and luxuries, the outright extravagances—all the useful, good, and pleasant things of life—that we consumed before the war but shall not be able to consume during the war, because the labour and materials that went into them will be needed for the war. The real economic cost of the war is what we do without while it is on.

To say that this sacrifice of the standard of living is necessary does not, of course, mean that it is pleasant. On the contrary, it is detestable, and it is a prostitution of economics to devote it to the search for ways and means of cutting down the economic welfare of the people—just as it is a prostitution of science to devote it to research in more efficient ways of killing. But these things are necessary in war, and it can truthfully be said that our job is to make the annual cost of the war as large as we can—for that is merely the obverse way of saying that the effort put into the war will be at its maximum, and the whole hateful business will be over the sooner. It is not the Government's duty to reduce the cost of the war—but it *is* its duty to see that the cost is distributed as fairly and scientifically as possible. Two questions arising out of the distribution of the cost of the war munitions and recruiting for the army have taken up the slack of unemployment, it can safely be assumed that *any* economy will help. When that time comes, the citizen need have no doubts left. Whatever the precise nature of his economies, they will release some men and some materials. And if there is an immediate demand for all sorts both of labour and of materials, the release will make an immediate contribution to the national war effort. This is true, even if the economy being made appears to bear little relation to the war. Suppose, for example, that I move into a smaller house and save £20 a year in rent. Then the incomes of the landlords of the country are reduced by £20 a year and they are able to spend that much less on food, clothes, travel, coal, or whatever it is that landlords spend their money on. And, consequently, fewer men and fewer materials are required to provide food, clothes, travel, or coal for the landlords of England. The men and materials released are the national service rendered by my economy of £20. At the height of war, it is difficult to imagine any form of raw materials or of manufacturing capacity that is not required, directly or indirectly, for the war effort; and the release of one man or woman will similarly provide one man or woman either for direct enlistment in the fighting services or the munitions industry or for taking the place of someone else who can make a direct contribution.

But even though economy of any sort helps, it does not follow that we should try to cut down all sorts of expenditure equally. There are two reasons for this. In the first place, we cannot cut down everything equally. It may be possible to spend no money at all, for a few years, on, say, new houses; it may be possible to reduce expenditure on furniture by four-fifths, or on clothing by two-thirds. But expenditure on food, which is the largest single item, cannot be reduced by anything like this proportion. There must clearly be a gradation between luxuries and necessaries. And secondly, though economy on anything helps, there are some ways in which the help is more direct than in others. Thus, if I refrain from buying a motor-car, I am releasing labour and materials which can immediately be used, in the same factories, to turn out mechanized vehicles for the Army or aircraft for the Air Force. If I economize by refraining from spending money on a holiday in the Highlands, the process is more complicated; the gillies or the charabanc drivers can enlist, but they have to be trained before they are much use as soldiers. So there should also be a gradation between things that are directly and those that are indirectly useful to the war effort.

To illustrate the sort of economies that will be both necessary and possible, Mr. R. W. B. Clarke, in his book *The Economic Effort of War*, calculated the table that is printed on p. 118 and graphically represented on p. 120. In the table the first column of figures shows the amount of money that was spent by the

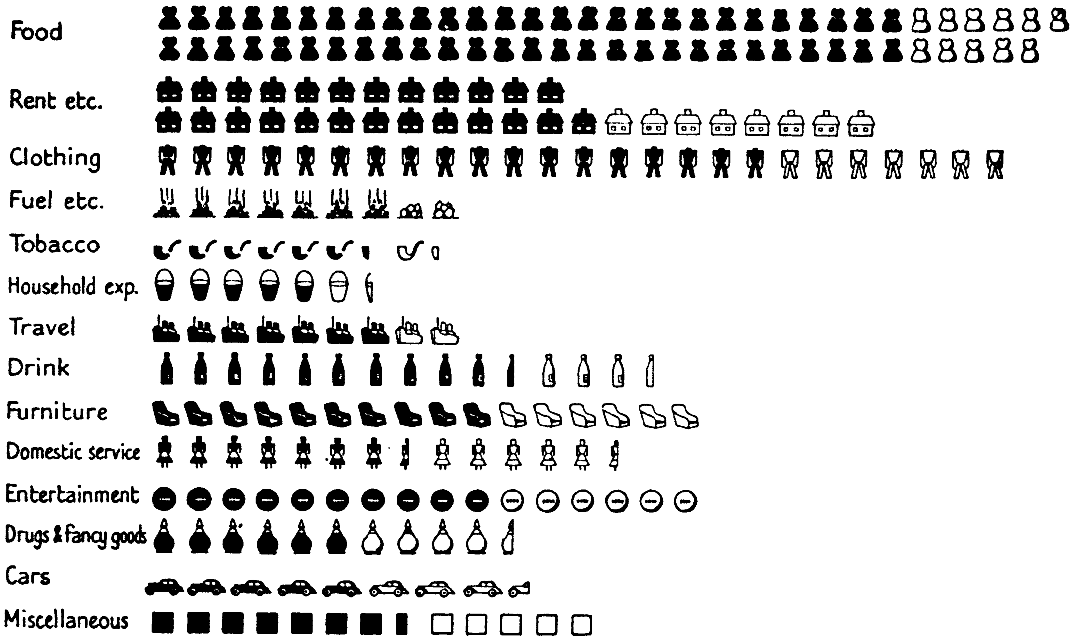
Economies in Consumption[*]

	Actual consumption in 1937 (in £ millions)	*Amount to be economized in war-time* (in £ millions)	*Percentage reduction* (%)
Necessities			
Food	1,360	272	20
Rent, rates, repairs, mortgages	620	207	33⅓
Clothing†	448	179	40
Fuel, light, water	180	45	25
Tobacco	160	32	20
Household expenses‡	127	32	25
Total necessities	**2,895**	**767**	**27**
Rail, tram, and bus travel	**170**	**51**	**30**
Drink	**260**	**91**	**35**
Luxuries			
Furniture and hardware	193	145	75
Entertainment and sport§	254	152	60
Domestic service and laundry	190	133	70
Drugs and fancy goods	148	111	75
Motor-cars, cycles, petrol, garaging, &c.	125	85	70
Miscellaneous	185	130	70
Total luxuries	**1,095**	**756**	**70**
Grand Total	**4,420**	**1,665**	**38**

[*] This table is taken, by permission, from *The Economic Effort of War*, by R. W. B. Clarke (Allen & Unwin, 1939); the arrangement of the figures has been slightly altered. Mr. Clarke acknowledges the first column of figures to Mr. A. E. Feavearyear, Mr. Colin Clark, and the London Press Exchange. † Includes soft furnishings. ‡ Soap, matches, stationery, newspapers, stamps. § Includes hotels and restaurants.

British people on the different categories of things in 1937; these amounts are presumably about what we should be spending in 1940 or 1941 if there were no war. The second column of figures shows the suggested *reduction* in the different items; these are things that we shall have to go without. The reduction is given as a sum of money, since there is no other way of conveniently representing it; but it means a real abstention from consuming that proportion (the proportion is given as a percentage in the third column) of the commodities or services in question. The saving of £32 millions on tobacco, for instance, means an economy of so-and-so many lbs. of tobacco, and if the price of tobacco goes up the economy, in money, will have to be just so much larger. The figures, in short, assume that all prices remain at the level of 1937. In the diagram, the same figures are shown in graphical form. Each symbol represents £25 millions; those shown just in outline are the consumption we enjoyed in 1937 but will have to do without when the war reaches its height.

Mr. Clarke does not claim for his table that it has any absolute validity or detailed accuracy. On the contrary, it was compiled by him—and is quoted here—only by way of illustration. This, however, can be said, in anticipation of what will be established in Chapter XI: the *total* economy of about £1,600 millions per annum in the consumption of the public is of the right order of magnitude. The economies made will have to add up to about that



Economies in Consumption

figure—or, more accurately, the actual things economized on must have a value, at their 1937 prices, of about that figure; if prices go up, the economy will have to be larger. So if the total is right, the margin for rearrangement of the figures is not very high. Thus it may be that £32 millions is too big an economy to expect in the public's expenditure on tobacco—it means cutting out one cigarette in five. But if we are more lenient on this item, we shall have to be more strict on some other.

Obviously, the task is severe. The reasons for believing that the cut in consumption will be something like this, when the war reaches its height, will be given in Chapter X; for the present you must be asked to take the figure on trust. The table shows what a very long way we have to go before we have done all that a war economy requires. At the time these words are written (April 1940), we have hardly begun; except for motor-cars, for some forms of domestic service, and for miscellaneous luxuries, there has hardly been any reduction at all. We shall have to begin very soon if we are to set free enough resources of men and materials to fight the war.[1]

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[1] One other detail is worth anticipating from Chapter X. The figures in the table relate to the *civil* expenditure of the people. Thus, soldiers are provided with food, clothing, and shelter at the expense of the State. A man who joins up automatically reduces the civil expenditure on these items and so eases the task of the rest of the population. When he spends his pay at the canteen, however, that is civil expenditure, since it is made by him, not by the State.

The sacrifices that will have to be made are therefore very large. Who is to bear them? One obvious proposition is that the rich will have to reduce their consumption in greater proportion than the poor; there are many working-class families who could not cut their consumption by 38 per cent. without starving. But another equally obvious proposition is that, if anything like £1,600 millions is to be saved, everybody except only those who are already on the starvation line will have to contribute *something*; there are not enough rich, or even rich and well-to-do together, to accomplish the whole amount by themselves. We have, then, a double rule to follow: everyone above the starvation line must be made to contribute, but nobody below the starvation line can contribute. As is only natural, some people concentrate on the first half of the rule, others on the second. Some people, in the search for ways of getting some contribution from the wage-earners, suggest methods that would fall with particular severity on the very poorest. Others, in their anxiety to prevent anybody from being pushed below the starvation line, oppose anything that would fall on any wage-earner. Thus, when the sugar duty was increased in the first War Budget in September 1939, much was made in the House of Commons of the fact that it would fall on the old-age pensioners, many of whom have no margin to spare. But because every hundredth consumer of sugar is an old-age pensioner, must we exempt the other ninety-nine? On the other hand, if we tax the ninety-nine, how can we avoid taxing the one exception?

There is only one way out of this dilemma, and that is to make special provision for those who are on the starvation line. One form of this policy has been given the name of the Iron Ration. Briefly, the suggestion is that the bare essentials of existence—bread, meat, milk, tea, clothes, rent, &c.—should be listed and their prices maintained at or near the pre-war level, with the aid, if necessary, of subsidies from the Government. Some steps were taken in this direction by the British Government at the end of 1939, though no promise was given about the commodities to be included or the prices to be maintained. The advantage of such a policy is that, when it is fully in operation, no one can claim that his standard of living is being driven below the starvation level by rising prices. In particular, claims for increased wages because of the rising cost of living lose much of their force if the only things that are rising in price are luxuries and semi-luxuries.

But in two respects the policy of the Iron Ration is incomplete. First, if bread, meat, milk, &c., are made artificially cheap, they are made cheap for the rich and the well-to-do as well as for the poor. The result of trying to *maintain* the consumption of the poorest might be to *increase* the consumption of all but the poorest—which is the opposite of what is wanted in war-time. Nor can the difficulty be got over by rationing the subsidized foods, for although the comfortably-off would then not be able to increase their consumption of *those* things, they would have more money left over for other things than if these foods were not subsidized. Thus though a policy of the Iron Ration may be necessary and desirable to safeguard the position of the poorest and to avoid claims for increased wages, it increases the general difficulty of persuading or compelling the public to cut down its consumption, to which we shall be coming in the next chapter.

Secondly, though the Iron Ration policy may keep down the prices of essential foods, it does not provide for those whose income is too low to buy the Iron Ration even at the subsidized prices. It is true that those who keep their pre-war incomes can maintain their pre-war consumption of the absolute necessaries of life. But what about those who lose their pre-war incomes, or were below the starvation line before the war broke out? To make the policy of the Iron Ration complete, we ought to go farther and make sure that everybody has enough income to afford the minimum quantities of the essential commodities. At first sight this may seem to be a tall order. But we have already gone a long way towards it. Old-age pensioners have been given the right to ask for more if their pension is not enough to cover their needs; the rates of Workmen's Compensation have been revised; there is unemployment insurance and unemployment assistance and public assistance; and there are dependents' allowances for the men of the armed forces. These cover an enormous number of people.

There is, however, one large gap in our present provision. Wage-rates in every industry are now at least enough to provide the Iron Ration for the wage-earner himself, his wife, and perhaps one or two children. But what if he has four or five children? He may then be unable to afford the Iron Ration even if he is in constant employment. Every inquiry into poverty in this country in recent years has shown that the worst cases are to be found among large families. There would be almost universal assent to the proposition that no part of the cost of the war must be put upon children who are already not getting enough to eat. Yet what are we to do? If wages are increased until they are enough to keep a family of five children, we are presenting a bonus to the bachelor and the childless man—at a time when the need is to cut down consumption rather than encourage an increase. On the other hand, if wages are fixed with reference to the Iron Ration for two or three people, the large family will continue to starve. There is only one solution—for the State to pay special family allowances, either for every child or—preferably—for every child beyond the second or third, the allowances to be enough to buy an Iron Ration for a child. The State protects itself in making many of its present allowances by examining the means of the family. But the family means test should work both ways. If there is a maximum, above which the State will not assist the family, there should also be a minimum below which the family income should not be allowed to fall. If we did this, then we should have made sure that nobody in the country could be pushed below the starvation line—we could claim that we had established a National Minimum standard of living below which nobody could fall even in time of war.

To do this would, of course, be costly. The State would have to find money both to keep down the cost of the Iron Ration and to pay family allowances and other payments to bring every family's income up to the National Minimum. The great danger of any such policy in peace-time would be that it might encourage shirking: if a man can get as much money by remaining unemployed as by working, he may choose to remain unemployed. But this danger is far less in war-time than in peace-time, because in war, after it reaches its height, employers clamour for labour and it is extremely difficult for anybody to remain unemployed, even if he wants to. And though a policy of the National Minimum would cost the State money, it would also have the very great advantage that it would make it easy for the State to raise money. The Minimum once secured, the Chancellor of the Exchequer could go ahead much more boldly in a policy of laying tax burdens on all sorts and conditions of people. He would still have to take care to deal justly between different classes; but he could feel sure that nobody would have to bear a burden that it was physically impossible for him to bear.

It is not the purpose of this book to make specific suggestions of policy, but only to outline the main principles that policy must, in any case, follow. The previous four paragraphs are not an exception to this rule, though they may seem to be. We have already gone so far towards a National Minimum (though we have done it so piecemeal that perhaps we do not realize how far we have got), the principle of subsidizing the prices of an Iron Ration has already been so emphatically accepted, and the continuance of both arms of the double policy is so clearly necessary a part of war-time economy, that what has been stated can almost come under the heading of a statement of fact.

We have gained some notion, in this chapter, of the sort of sacrifice that war can be expected to impose upon us, and we have seen how the very poorest can be exempted from the imperative necessity, which will fall on all the rest of the community, for cutting down consumption of the useful and pleasant things of life. In the next chapter we shall estimate the money burden of the sacrifices to be made and examine how we may best impose them on ourselves.

IX

PAYING FOR THE WAR

MONEY does not win wars. Wars are won by men and materials, by having the right kinds and quantities of men, trained to the right jobs, equipped with the right materials, in the right places at the right times. If the men and the materials do not exist, or are not mobilized for war, then money cannot create them, or turn a ploughshare into a sword overnight. And on the other hand, if a country has more well-trained men than its enemies, more equipment and more raw materials to replenish its stocks and feed its people, even the most appalling financial bungles can hardly prevent it from winning the war.

Finance, then, is not one of the primary sinews of war. In order of war-time importance it ranks after the provision of men and materials and the various problems that have been discussed in earlier chapters. But that is not to say that the finance of war is not a subject of the greatest importance. Money is the only way by which the cost of the war can be *measured*. More than that, it is the only way (or at least much the most convenient way) by which the cost of the war can be *allocated* to different individuals. As the last chapter has shown, money is not the real cost of the war, nor is it financial policy that imposes sacrifices on the people. The sacrifices arise from the need to set men and materials free for fighting the war. But money is the instrument through which this necessity for sacrifice is imposed upon us all.

Moreover, though money may not contribute very much to the decision of the war, it can make a great difference to the amount of social turmoil and individual misery that war can impose on the individual citizens of victor and vanquished alike; it can add to the difficulty of the post-war problems that are left for solution by the generation who survive. It is a commonplace that defeat in war contributed less to the social upheaval in Germany which produced Hitler than the ravages of the post-war inflation in 1922–3; and though financial policy probably played a very small part in Germany's defeat, it was the prolongation into post-war years of unsound methods of war finance that brought about the great inflation. Properly regarded, then, the problem of war finance is not that of winning the war, to which finance can contribute little, but that of seeing that the burden of the war is fairly spread and that the war is won with the minimum of disturbance to the framework of Society or to the security of individuals.

The war, as has been said, is fought with men and materials. Money can neither create them nor destroy them. And in the main, the men and materials used for the war must be those that are available at the time of the war. This point—obvious when, in earlier chapters, we were discussing the practical problems of men and materials—is so often forgotten or misunderstood when it comes to finance that it is worth emphasizing. The choice between paying for the war out of taxes and paying for it out of loans is frequently represented as a choice between putting the burden on the present generation and putting it on the future. Now it is perfectly true that borrowing, instead of taxing, relieves the present generation of the unpleasant necessity of paying taxes, and imposes on future generations the inconvenient technical problem of taking money out of one of its pockets (that labelled 'tax-payers') and paying it into another ('debt-holders'). But just as this future process imposes no necessary real burden on the community as a whole (of which both tax-payers and debt-holders are members), so the process of raising a loan relieves the community of none of its real burden. For a loan operation to-day, though it puts money in the Exchequer, cannot provide more men of military age than are now alive; it cannot produce, for their equipment, steel that will not be made until the future, or coal that will stay in the ground for decades longer, or machines that have not yet been invented. The men and machines that are used by the British Government for war in 1940 are those that are available, or can be made available, in Great Britain in 1940. The burden of providing these men and machines for war, and of doing without the wealth or beauty or comfort they might otherwise have created, must therefore fall upon the citizens of the United Kingdom who are alive in 1940. The war effort, in short, is a *current* effort; it cannot borrow from the past or the future.

To this statement there are, it is true, three minor exceptions. Although borrowing from our own people relieves no present burden, since no community can enrich itself by borrowing from itself, borrowing from abroad is a different matter, since there is a present addition to the resources available to the British community as a whole and a future deduction from those resources when interest payments and capital repayments have to be made. Similarly, if we draw upon the investments we have made in the past in foreign countries, we can increase our present resources at the expense of having smaller assets—and therefore smaller income from them—in the future. Thus, if we import aircraft from the United States without paying for them, or if we import maize from Argentina in return for a remission of part of the Argentine debt to us, we are getting useful commodities, the products of American or Argentine men and materials, without *at present* having to give any of the products of our own men and materials in return. This is not true, of course, of ordinary imports, which are paid for by our own exports, for though the imports are a gain of men and materials to us, the exports are a loss. Thirdly, we can also, in a sense, borrow from the future by failing for a few years to keep in good repair the inheritance of capital equipment we have received from our ancestors—houses, roads, factories, &c.—and leaving for the future the task of catching up with accumulated deficiencies.

But none of these exceptions is large enough to affect the general rule. The biggest source of foreign borrowing in the last war—the United States—is closed to us by the Johnson Act, which prohibits loans to War Debt defaulters, and by the Neutrality Act, which prohibits loans to belligerents. Moreover, in the last war, even though we were borrowing from America, we lent so much to the Dominions and the Allies that we were, on balance, lenders rather than borrowers. In this war, though the Dominions are more likely to have money to lend us than need to borrow from us, we cannot count on enough from this source to do more than offset our probable loans to our Allies. Our existing foreign assets cannot be converted into cash at a rate faster than a few hundred millions a year, and the funds raised in this way would hardly, at most, pay for more than one-tenth of the cost of the war.

There is also not very much to be obtained by letting our capital run down. There are some forms of capital that can be directly consumed—for example, railway track can be torn up and converted into shells. (The most important form of capital consumption is by using up the stocks of all forms of consumable goods that were in the hands of traders when the war broke out. There is evidence that this was done on a large scale in the first six months of the war, but after it has been done once it cannot be repeated.) But, in general, the amount of men and materials that can be released by postponing the upkeep of capital is not large. The total amount spent in this way is comparatively small, and there are many forms of capital (e.g. roads, railways, and ports) that have to be kept in the best of condition during a war.

These three methods of borrowing men and materials from other communities or periods are, then, all minor exceptions. Having mentioned them, we shall do better to forget them and to concentrate on the general rule—that a community can fight only with men and materials, and that the men and materials it fights with in 1940 are those alive and available in 1940. The real economic burden of the war is laid on those who are compelled to do without the goods and services that those men and materials would otherwise have produced. And this sacrifice is, therefore, also borne in 1940. In the only real sense, we shall pay for the war as we fight it. If the methods of finance seem to lead to another result, they are distorting reality. And i monetary appearance and economic reality clash, it is always reality that wins. This is the Golden Rule of war finance, which we shall do well to bear in mind.

Before we begin any discussion of the means by which the money cost of the war can be raised we must first get some idea of how large that cost is likely to be.

Perhaps we can safely assume that this war will not be less costly than the last. In 1918 the total expenditure of the British Exchequer (including the loans to Allies and Dominions, which will be as necessary this time as last) was about £2,700 millions. A bare figure such as this, however, has very little meaning. It needs to be related to the changing value of money and to the total wealth of the community. The best way of visualizing expenditure on this scale, in fact, is not as a sum in millions of pounds, but as a proportion of the total National Income.

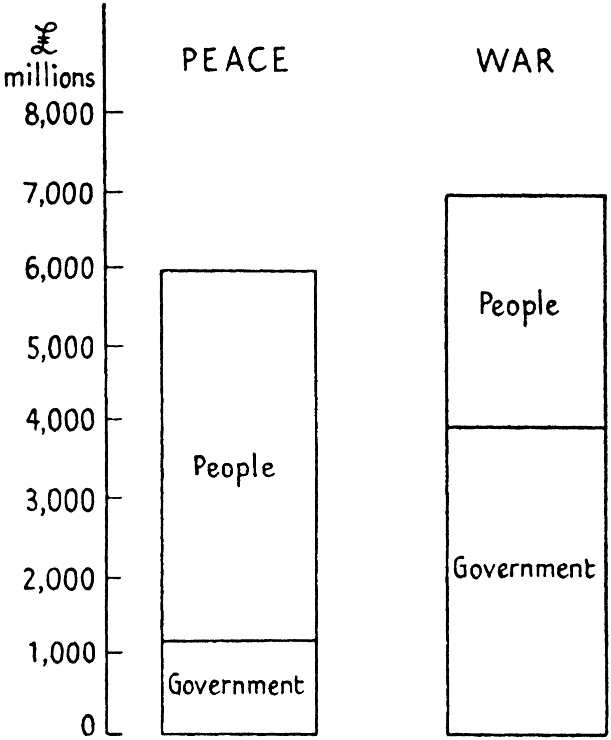
The National Income has been sufficiently explained in Chapter II, where it was estimated that the gross National Income of the United Kingdom was running, in August 1939, at the rate of about £6,000 millions a year. It seems probable that the National Income in 1918 was about £5,500 millions. In 1918, then, our latest experience of full totalitarian war, the Government spent just about half of the community's total income. This means that one out of every two men and women was working for the Government, directly or indirectly. It means that the community lived on what it produced in six months and devoted the work of the other six months to fighting.

We can hardly expect that full totalitarian war will take a smaller proportion of the National Income this time than it did last. Indeed, there are several reasons why it can be expected to take a higher fraction than 50 per cent. In the first place, war is more costly, since the equipment of the soldier has grown enormously in cost since 1918. Secondly, we can afford a higher fraction to-day, for while the bare minimum of existence is much the same to-day as in 1918, the community's capacity to produce has benefited from two decades of progress. And, lastly, the 1918 figure of 50 per cent. includes all the expenditure of the Government, on education, health, and other civil purposes as well as on the war. The non-warlike expenses of the Government have grown very considerably in the twenty-year interval with the expansion in social services and the heavy cost of the National Debt. Thus, if the war expenses are the same proportion of the National Income as in 1918, the war *plus* non-war expenses of the Government will be a higher proportion than they were then.

It seems probable, then, that when the present war gets to the stage of a really desperate death-struggle it will be necessary for the Government to take for its own uses more than half the total income of the community. Moreover, this does not merely mean more than half of the £6,000 millions a year that represents the present National Income. For, as in the last war, it can be expected that the people will work harder and that the physical volume of production will increase. Sticking to round figures, we can guess that the National Income will increase, when the war gets properly under way, from its pre-war £6,000 millions to £7,000 millions. It is this figure of which more than half will be taken by the Government.

The conclusion of this very brief statistical analysis is this: that the Government's total expenditure will have risen to as much as, say, £4,000 millions a year by the time the cost of the war takes as high a proportion of the total resources of the nation as it was proved in 1918 that we can afford. This figure assumes, of course, that there is no rise in the average level of prices or fall in the value of money. If there is, the figure of £4,000 millions will be correspondingly higher.

The moral of this figure can easily be drawn. If the Government takes £4,000 millions out of a total National Income of £7,000 millions, there will be £3,000 millions left for the public to spend on its own requirements. Out of the National Income on the eve of war of £6,000 millions, the Government was taking about £1,200 millions (the figure was already swollen by rearmament), leaving £4,800 millions for the expenditure of the public. If, then, the cost of the war is going to rise to £4,000 millions a year, expenditure by the public must fall from £4,800 millions to £3,000 millions, or by rather more than one-third. It does not follow that what is generally understood by *consumption* must fall in this proportion, since the public will be able to economize a certain amount by not maintaining its pre-war scale of expenditure on forms of capital such as houses and factories. But the bulk of the economy



The National Income in peace and war

will have to come in consumption. This is the justification for the figure of about £1,600 millions which was taken in the table on page 118 as the total of the economies that the public will be called upon to make. The change from peace to war is illustrated in the diagram on the previous page.

For the benefit of those who find figures easier to grasp when they are expressed on a daily basis, the matter can be put this way. At the outbreak of the war the British community had a total output of about £16½ millions a day, of which the Government took about £3¼ millions a day, leaving £13¼ millions for the people to spend themselves. When the war reaches its height the national output will be nearly £20 millions a day, of which the Government will want £11 millions—£2 millions for the ordinary peace-time purposes of Government and £9 millions for the war—leaving only £9 millions for the public.

This restriction of consumption is an unpleasant thing. But it must not therefore be regarded merely as an unfortunate by-product of war finance—still less as a by-product that can be avoided by skilful planning. For the restriction of the consumption of the people is, and must be, the deliberate object of war finance. In war, the State's needs are unlimited. It wants to divert to the war effort just as many men and materials as can possibly be spared. Since the total output of the nation is necessarily limited, the expansion to the maximum possible of the resources devoted to war is the same thing as the compression to the minimum possible of the resources retained to satisfy the needs and desires of the public.

The fundamental task of war finance, then, is to transfer resources from consumption to the purposes of war. The raising of a given sum of money is only the method by which the transfer is effected. It follows quite inevitably that any scheme of war finance that avoids the restriction of consumption is *ipso facto* an inefficient scheme. Indeed, when war reaches a fully totalitarian state, the amount of sacrifice that a plan of finance imposes is a measure of its efficiency, since it is a measure of the volume of resources that is set free for the war. The choice between different methods of finance is thus not one between methods that impose a greater or less burden of sacrifice of consumption on the people. The amount of sacrifice is fixed, not by finance, but by technical factors such as the number of men drafted into the armed forces or the munitions factories, and by the volume of materials that is required to equip and supply them. The only choice open to those who direct financial policy is between different methods of distributing the total sacrifice among different members of the community.

There are three main methods of taking goods and services away from the people and giving the Government power to command them. The most obvious is taxation. The Government could, in theory, raise the existing taxes and impose new ones until they brought in £4,000 millions a year, leaving the public with £3,000 millions to spend. The second method is borrowing which, in its simplest form, would have exactly the same economic effect as taxation, save that interest would be paid on the money taken by the Government. Borrowing can, of course, be voluntary or compulsory. The third method is inflation which, since it is the hardest of the three to understand, we must now proceed to explain and examine.

There are innumerable definitions of inflation. In the present context of war finance, however, it means only one thing: it is the name given to the method of reducing the consumption of the public by increasing the prices of the things they buy. The task of any form of war finance is to reduce popular consumption; taxation and borrowing do it by taking money out of the pockets of the people before they can spend it; inflation lets them spend as much as before, but sees that they get less for it.

It is necessary to insist that the rise in prices is not a mere unfortunate by-product of inflation, still less an avoidable consequence of inflationary finance. It is the essence of the whole business, the means by which it attains its object. Too often descriptions of inflation concentrate on the mere mechanisms by which prices are increased and ignore the reason why they must be increased. Too often statesmen who are busy inflating bring in Acts of Parliament to stop the rise of prices, without realizing—or at least without admitting—that if they succeeded they would ruin their own policy. It must be insisted that the *object* of inflation is to make prices rise.

The means by which inflation makes prices rise can be either simple or complex. The simplest would be the printing of paper money by the Government to meet the cost of the war, thereby avoiding both increased taxes and borrowing. This newly printed money would be paid out by the Government in soldiers' wages, in payment for steel, petrol, cloth, and the thousands of other things a Government at war requires. It would be spent, that is to say, on much the same things as those on which the public spends its money. The Government's expenditure would go up and the public's would not be diminished. But in war-time, the supplies of nearly everything are strictly limited (except, perhaps, during the preliminary period when the unemployed are being absorbed). So there would be more money trying to buy the same, or a smaller, quantity of goods. Inevitably prices would rise. They *must* rise, because it is only by their rising that public buying can be choked off, and the Government can get the quantity of goods and labour it must have for the conduct of the war. The Government will have to go on printing money and pumping it into circulation and forcing prices up until it has got the men and the materials it wants. And if any section of the public, seeing the cost of living rising, succeeds in getting an increase in its income (e.g. a Trade Union succeeds in having the rate of wages raised), then that merely means that still more money will have to be printed, and prices will have to rise still further. It is impossible for the public as a whole to catch up with the rise in the cost of living, for the purpose of the entire proceeding—to repeat once more—is to cut down the consumption of the public as a whole. And if one section of the public does succeed in keeping pace with the rise in prices, then the rise will have to be just that much larger in order to squeeze a bit more out of the rest of the community.

This, in its simplest terms, is the method by which inflation works. The next two paragraphs record two minor qualifications to the main principle. Since they are only minor qualifications, and in order not to confuse the main thread, we will put them in parentheses.

(In a modern community, bank-notes are only a small part of the money used. In Great Britain, most payments are made by cheque, without the use of actual notes. That is to say, the major part of the British money supply consists of deposits with the banks. This so-called 'bank money' can, within limits, be created by the banks with even less trouble than is involved in the printing of a note. An inflating Government in a modern community would not do most of its inflation by printing notes but by inducing the banks to create additional supplies of bank money—i.e. deposits—for its use. Moreover, the process need not be direct. In the war of 1914–18, the public was encouraged to borrow from the banks and use the proceeds to buy

War Loan. This looked like genuine borrowing—was not the Treasury borrowing from private individuals?—but it was inflation none the less, for the money that was lent to the Government had been newly created for the purpose. The test is this—has every pound that the Government is spending been taken out of somebody's income? If so, there is no inflation. But if the Government's expenditure increases without the public's expenditure being reduced, pound for pound, then, whatever the outward appearance of the financial devices adopted, they are, in fact, inflationary.)

(For a Government to finance itself by creating money does not always raise prices. If there is large-scale unemployment, the newly created money may not compete with the existing expenditure of the public; it may provide wages for the unemployed and buy the goods they make. In other words, if the supply of goods and labour increases at the same rate as the supply of money, there is no reason why prices should rise, and no reason why the process should impose any sacrifice on the public. This—by and large, and subject to a number of qualifications—is the way the Nazis financed themselves, under the skilful tutelage of Dr. Schacht, for their first five years, as was explained in Chapter III. But they found it possible only so long as they had supplies of idle men and idle materials to draw upon. In full war conditions, almost by definition, there are no idle men and no idle materials. Consequently, the only way in which inflation can serve the Government's purpose is by raising prices.)

There is a striking unanimity among all sections of opinion that inflation is a disastrous method of financing a war which must at all costs be avoided. The public's expenditure has to be cut down in any case, so that is not a valid objection to inflation. But the method of doing it by raising prices (for that is the real meaning of inflation) has, indeed, a number of notable disadvantages which we may briefly list.

1. It is unfair as between rich and poor. If prices rise by 20 per cent., then the poor man's consumption and the rich man's consumption are cut down by precisely the same proportion. This is contrary to the whole principle of progressive taxation, by which the burden is adjusted to the ability to pay.

2. It is unfair as between different sorts of incomes of the same size. A man whose income comes from a pension, or from the fixed interest on securities, suffers the full weight of the rise in prices. A man whose income comes from wages may succeed in having his wages increased and thus relieve himself of some of the burden of the rise in prices—even though, as has been explained, he can rarely quite catch it up and his action, by making necessary an even higher rise of prices, increases the burden on the man with the fixed income. A man whose income is made up of percentage commissions (e.g.

a broker or agent) will find that his income goes up *pari passu* with the rise in prices. This distribution of the burden is quite haphazard and utterly unfair.

3. Inflation is an inefficient means of attaining its object—which is the reduction of the consumption of the public. For some categories of people have their incomes quite considerably increased by it. Traders, who buy goods, hold them for a period and then sell them, are presented with an entirely unearned profit if the price of the goods has risen between the purchase and sale. Everybody who lived through the last war will remember that the whole scale of living of many hundreds of thousands of traders, large and small, was raised during the war. Profiteers are the offspring of inflation.

4. Inflation has very disturbing social effects, both during its course and afterwards. While prices are rising, there is a continuous epidemic of strikes, resulting from demands for higher pay. And after it is over and the level of prices is established on a permanently higher level, those sections of society who have borne the heaviest burden and have been impoverished as a result harbour a sense of grievance which may become dangerous. Moreover, it is not only the rich *rentier* and the middle class who suffer. All pensioners and those who are living on their savings find themselves left with incomes which will buy much less than before the war.

These disadvantages are quite enough to condemn inflation. Against them, only one great advantage of inflation can be set. It is easy.

> 'The political argument in favour of inflation is almost overwhelming,' says Mr. J. M. Keynes. 'No one has to take the responsibility for inflation, not even the Chancellor of the Exchequer. . . . The Labour Party . . . will never be asked to approve inflation. It will just happen. It is nature's remedy, ebbing up like the tides, silently and imperceptibly and irresistibly. It engages in its support our *laissez-faire* traditions. . . . It greatly benefits some important interests. It oils the wheels everywhere, and a régime of rising wages and profits spreads an illusion of prosperity. So if one is to bet on the field, inflation must always be the favourite.'

It is this tempting easiness of inflation that makes it a menace. Since inflation happens by itself if nothing else is done, the problem of war finance is reduced to the search for means of avoiding it. In a really big war, it is questionable whether the full cost can be raised without some inflationary admixture. As we shall discover in the next chapter, the task of raising something like £4,000 millions a year in taxation or non-inflationary borrowing (i.e. borrowing that really reduces the expenditure of the public by the full amount of the Government's receipts) is so very difficult as to be almost impossible. Not that the public's consumption cannot be reduced in that proportion—it can be and will be. The task is difficult because the process is necessarily so painful that it cannot be openly faced, but must be left to be accomplished by the device that works 'silently and imperceptibly and irresistibly'.

But if we cannot wholly avoid inflation we can at least do our utmost to see that the role it plays is reduced to the unavoidable minimum.

X

TAXES AND LOANS

THE financial problem of the war is to provide the Government with an income of £4,000 millions a year—or, more accurately, with such a sum of money as will buy what £4,000 millions would have bought at the outbreak of war—and to do it with as little inflation as possible. The alternatives to inflation are taxes and loans out of the genuine savings of the people. In this chapter we shall explore the possibilities of both these non-inflationary methods of finance.

The taxes imposed in Lord (then Sir John) Simon's budget of April 1940 are estimated to raise the revenue of the Exchequer in the year 1940–1 to £1,234 millions. When some of the new taxes have had a full year to run, they will bring in a further £27 millions of revenue. In addition, the Chancellor announced two new taxes for which he made no estimate of revenue. The first of these was the extension of surtax to incomes between £1,500 and £2,000 which, when it becomes effective, will bring in something like £3 or 4 millions. The second was the Purchase Tax, and since no rate of tax was mentioned, no yield can be guessed. In general, however, we can say that the level of taxation announced in April 1940 will eventually bring in a revenue of rather over £1,300 millions—or just about one-third of the probable maximum cost of the war.

The problem of taxation in war-time is, then, quite simply this: how much more can be raised? Judged by peace-time standards, the level of taxation is already too high. But many of the peace-time criteria do not apply, or apply in reverse, in war-time. Thus one maxim of taxation in peace-time is that the consumption of essential commodities should not be restricted. But in war-time the restriction of consumption, even of essential commodities, becomes necessary, provided only that those who are already on the starvation line should not be pushed below it. The peace-time arguments similarly fail to apply in war-time with respect to the income tax. In normal times the great argument against pushing income tax too high is that it will diminish the incentive to take risks and show enterprise. Individual initiative, founded on the profit motive, is still the mainspring of our economic system (so runs the argument), and if you leave the individual to bear all his losses, but take away too large a slice of his profits, he simply will not venture his capital and there will be unemployment. But in war-time, the community does not want individuals to venture their capital on their private concerns, profitable or not. Any necessary investment of capital tends to be more and more under the State's direction, and all unnecessary expenditure should be discouraged. So in war-time it is a much less valid objection to a tax increase that it diminishes the incentive to enterprise.

This point is frequently misunderstood. It is sometimes argued that the public should be encouraged to continue with all forms of industry and enterprise because in so doing they are earning incomes and making profits which can be taxed for the benefit of the Exchequer. It is perfectly true that if the alternative is between employing labour and capital and leaving them idle it is better in every respect to employ them. But in war-time the alternative is between employing them in making private needs and in meeting the needs of the war. To say that the former is preferable because it produces revenue is to slip into the fallacy of thinking that it is money, and not men and materials, that the Government really wants. Similarly, it is sometimes argued that the public is doing no harm in maintaining, or even in increasing, its consumption of British-made goods, because then 'the money stays in the country'. But though money can be used over and over again, labour cannot. If it is used to make goods for public consumption it cannot be used to make shells or tanks. The object of taxation in war-time is to reduce consumption; it is no criticism, but praise, of taxes in war-time to say that they achieve the object designed for them.

War taxes, in short, both on the rich and on the poor, can go much farther than in peace. This point having been established, there is a temptation to say that the whole cost of the war—or at least the greater part of it—should be levied on the rich. But very few people realize how little income the rich have left after they have paid their taxes—and it is, of course, only out of income that taxes, however assessed, can be paid. In 1936–7—the last year for which we have figures—there were 95,750 persons with incomes over £2,000 a year. Their incomes added up to £483·7 millions, or an average of £5,052 a year each. On these incomes, surtax, at the present rates (i.e., starting at £2,000, not at £1,500, as it will do in 1941–2), would amount to about £65 millions and income tax to about £165 millions. This leaves about £250 millions, or about £2,600 a year each, which is all that is left of the incomes of the rich. If the State decided, over and above the existing taxes, to take every penny over £2,000 a year, so that nobody should have a net income higher than that figure, it would only get 95,750 times £600, or about £57,500,000. Clearly there is not much more to be got from the incomes of the rich.

Next to the notion of getting it all from the rich, the second most popular device for raising money by taxation is by what can be called 'fancy taxes'—the definition of a fancy tax being that it will not hit the person who proposes it. Excess profits taxes are a good example of 'fancy taxes', since the number of people who feel themselves hit in their own pockets by them is infinitesimal. It is very right and proper that there should be an Excess Profits Tax and that it should have been imposed in the first month of the war. Indeed, the principle might very well go further; there might be an Excess Incomes Tax, by which every individual whose income was higher in war than in peace would pay over to the Exchequer a substantial part, if not the whole, of the increase. But we should not comfort ourselves with the belief that taxes on excess profits or incomes are likely to help very much in avoiding inflation. For it is the inflation which creates the excess profits and the excess incomes. If there is no rise in prices, there will be very few larger incomes, and correspondingly little revenue from Excess Profits Tax or Excess Incomes Tax. Contrariwise, if there is a large yield from these taxes, it will be (as it was in the last war) because of an inflationary rise in prices. By all means let the revenue benefit from excess profits and excess incomes, if there are any. But from the wider point of view of financial policy as a whole, this sort of tax is a perfect example of locking the stable door after the horse has gone.

Much the same sort of consideration applies to luxury taxes—the other main variety of 'fancy taxes'. For if the main battle of the war-time economy is won, there will be no luxuries, and a tax on their purchase will bring in no money. And if it does bring in a substantial yield, that in itself proves that something is wrong.

If the whole cost cannot be raised from the rich, and there is little help to be got from 'fancy taxes', we are forced back upon the painful but necessary conclusion that the only sort of taxation that will make a major contribution to the solution of the problem is taxation on the income and expenditure of the ordinary man—taxes, and heavy taxes too, on you and me.

For the middle incomes, those between £500 and £2,000, much the most effective and efficient tax is the income tax. If we are going to take seriously the business of raising a larger proportion of the cost of the war in taxation, the income tax will have to be increased above the level of 7*s*. 6*d*. in the £, to which it was raised for 1940–1. But it is really quite misleading—so far as the middle incomes are concerned—to speak about income tax being levied at the rate of 7*s*. 6*d*. in the £. Nobody in these middle incomes pays as much as 7*s*. 6*d*. in the £ on his income. Even a bachelor with an income of exactly £2,000, all of it unearned, only pays about £675, or 6*s*. 9*d*. in the £. A married man with two children whose income of £2,000 is wholly earned pays £525, or 5*s*. 3*d*. in the £. Moreover, these are at the very top end of the middle incomes, verging on the surtax class. A married man with two children and an earned income of £1,000 pays only 3*s*. 7*d*. in the £ of his income, even with the 'standard rate' at 7*s*. 6*d*. Would such a man feel badly aggrieved if he were told that, out of his income of £83 a month, he had to find £5 a month more, so that his total payment would amount to 4*s*. 10*d*. in the £? But that would be the practical effect of raising the 'standard rate' to 10*s*. in the £. The standard rate is, in any case, an arithmetical fiction, and if we were to forget about it, it might prove possible to impose further increases in the income tax without causing the psychological shock that would be the inevitable consequence of pushing the standard rate any higher than it is at present. With the standard rate of 7*s*. 6*d*. in the £, the income tax brings in about £475 millions. If the rates were raised by one-third all round—the equivalent of raising the standard rate from 7*s*. 6*d*. to 10*s*. in the £—the additional yield would be something like £160 millions.

For people with wage-earners' incomes, the levying of a direct tax on incomes presents very grave administrative problems. It is impossible to give married men, or fathers of families, any treatment different from that given to bachelors, without enquiring into the details of 20 million individual incomes—an impossible task. Also, if every worker is first allowed to receive his income and is then later expected to pay tax on it, there is the problem of collecting 20 million separate payments. We should be going too far if we said that it is impossible to levy a direct tax on small incomes; but the only sort of direct tax that would be practicable would be one that was levied at the same rate on everybody's income and was deducted by the employer at the source. This would, of course, be very unfair to family men, but that could be remedied if some part of the yield were set aside to finance a system of cash allowances for all children. If a tax of 20 per cent. were levied at the source on all wages above £2 a week it would produce several hundred millions a year; family allowances would cost perhaps £100 millions a year.

The only other way of getting revenue from the wage-earners, if a direct tax is rejected, is by indirect taxes on various articles of consumption, like the beer, whisky, tobacco, sugar and tea duties. The new Purchase Tax is one of these. But all such taxes tend to fall between two stools. If they are to produce a substantial amount of revenue, they must be levied on necessaries, like food and clothes; but in that case they are grossly unfair by falling most heavily on the poorest. And if, in the attempt to avoid unfairness, necessities are exempted (as in the Purchase Tax), then the yield of revenue is comparatively small.

By one means or another, however, a contribution will have to be exacted from the wage-earners (though it will, naturally, be a smaller contribution than will have to be taken from the larger incomes). Indirect taxes are the easier, but the unfairer way. It would be better to take the political bull by the horns and impose a direct tax on wages, as is done both in France and in Germany.

An increase in the present income tax and a new tax on wages would, however, let off one class of incomes comparatively lightly. This is the incomes of more than £5 but less than £10 a week. These people at present pay a smaller proportion of their incomes in taxation than those who are either richer or poorer. They pay less than the poor because their purchases of beer, whisky, tobacco, sugar, tea, and other dutiable articles take a smaller fraction of their incomes than of the poor man's income. They pay less than the rich because income-tax does not fall on them so heavily. Indeed, even a steep rise in the standard rate of income-tax does not hit them very hard. At a standard rate of 7*s*. 6*d*. in the £, a childless married couple with earnings of £300 (about £6 a week) pays £15 in income tax and has £285 left. An increase in the standard rate to 10*s*. in the £ would take only £5 more and lead them to economize to the extent of only 2*s*. a week. When we are talking of confiscating all incomes over £2,000 a year, placing a 20 per cent. levy on all wages over £2 a week, and increasing by one-third the taxes now paid by the incomes from £500 to £2,000, an economy of 2*s*. a week is ridiculously small. One of the essential conditions of imposing tax burdens of this crushing weight is that none shall escape their fair share.

What has been said in the last few paragraphs was not intended to be a set of definite proposals, but rather a series of illustrations of what could be done by way of increased taxation if we set our minds to it. But even with all the devices that have been mentioned, it is doubtful whether the revenue from taxes would be increased to more than about £2,000 millions—or just about half the probable cost of running the Government in a year of totalitarian war.

It is, in fact, humanly impossible to finance a totalitarian war entirely out of taxation. All that can be done is to increase taxation as far as it can be pushed in order that it may make its contribution to the avoidance of inflation. And the major point that should be grasped by those who advocate an increase of taxation is that the only taxes that are likely to bring in any substantial sums of money are not confiscatory levies on the rich or fancy taxes on profiteers or Rolls-Royces, but plain honest taxes that hurt plain honest people.

If we want to avoid inflation and yet cannot raise the full cost of the war in taxes, the only remaining resource is borrowing. Before we start to think about borrowing, however, we must have clearly in our minds the distinction between genuine borrowing and inflationary borrowing that was made on pages 142–3. The touchstone is this: have the pounds that the Government is borrowing been taken out of somebody's income? Would they have been used, if they had not been lent to the Government, to increase somebody's expenditure? If the answer is Yes, then the borrowing is genuine. But if the pounds have been newly created in order to be lent to the Government, then the process is merely a disguised form of inflation and should be treated as such. The great danger of borrowing is that it is so easy to slip over unawares from the one kind to the other.

The economic effect of borrowing is exactly the same, at the time, as that of taxing. Money is taken out of the pockets of the public and transferred to the Government. The psychological effect, however, is rather different. Lending is nearly always voluntary; and even if it were compulsory, the individual would not resent it so bitterly if, in exchange for his present sacrifice of income, he received a title to wealth and a twice-yearly payment of interest. It is, therefore, psychologically—that is, politically—easier to raise a given sum by loan than by tax. In the future, of course, there is the inconvenience of an increased National Debt to be carried, and though it is quite true that the payment of interest on the National Debt involves nothing more than taking money out of one of the community's pockets and paying it into the other, it nevertheless sets difficult financial problems for the Chancellor of the Exchequer, makes heavy taxation inevitable, and gets in the way of all plans for social betterment that involve the spending of money. As a matter of abstract principle, taxation is preferable to borrowing. As a matter of practical politics, we shall have to have as much as we can of both.

Compulsory saving comes half-way between taxing and borrowing and, in many respects, has the defects of both, since it incurs all the odium of compulsion (as well as raising difficult problems of equity in assessment) and yet leaves a swollen National Debt behind. It may be, however, that the difficulty of imposing heavy additional taxation on the wage-earners would lend a particular appeal to the plan put forward by Mr. J. M. Keynes, by which a given percentage of each worker's income would be paid into the Post Office Savings Bank, or some other approved institution, to stand there to his credit until it was released after the war. The Keynes plan can be regarded either as compulsory saving or as 'deferred pay'. Its unique feature—the scheme for repaying the individual taxpayer after the war—would, if properly handled, be of great advantage after the war, since it would provide a means of stimulating trade during depressions and would endow the wage-earners of the country with a substantial amount of capital. But since these advantages belong to the period after the war is over, they have little relevance to the problem of paying for the war while it is on. As a piece of war finance, the Keynes plan is a tax on wages.

If lending is compulsory, its amount can be put at any figure that Parliament can be induced to approve. But if lending is voluntary, then the sum total of the genuine borrowing that the Government can do is no more than the genuine savings of the public —i.e. that part of their incomes that does not go in either taxation or consumption.[1] How large is this likely to be?

The net savings of the nation in time of peace are usually put at something like £400 millions—which would not go very far to meet a bill of ten times that amount. But there is another resource that can be called upon. In a normal year, the community spends something of the order of £500 millions a year on maintaining and renewing its capital equipment. Some of this work must be done even in war-time; but much of it can be postponed. If so, there is available a sum of money, which we can guess at, say, £350 millions. Added to the normal net savings, it makes a total of, say, £750 millions a year.

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[1] It is important to remember that 'the public' includes not only individuals but also institutions like insurance companies and other limited companies which do a great deal of saving on behalf of their shareholders or policy holders.

But even this does not solve the problem. If taxation can only with the greatest difficulty be brought up to £2,000 millions, and the present rate of genuine savings yields less than £1,000 millions, then there is still a gap of more than £1,000 millions to be closed. If it is to be closed without inflation, there is only one expedient open—the genuine savings of the people must be increased.

This may well seem to be an impossibility. 'What!' the average man might well say. 'You are going to make swingeing increases in the taxes I pay, and then expect me not merely to maintain my normal rate of savings, but actually increase it?' The answer—which should be obvious to anyone who has read thus far—is that it is not any particular plan of finance that makes this demand of the ordinary man, but the fact that totalitarian war can be counted on to swallow up more than half the total income of the community. After he has paid his taxes, the consumption of the ordinary man is going to be still further restricted by some means. He can make his choice whether he would rather do it by increasing his savings or by having the cost of living rise against him.

There is, however, this much truth in the ordinary man's protest. He cannot be expected voluntarily and consciously to increase his savings. What can happen is that he can be compelled, by rationing or shortages of everything he wants to buy, to save something even out of his reduced after-tax income. The amount of genuine borrowing that the Government can do can therefore be stated as 'about £750 millions *plus* whatever additional savings are brought into being by rationing'. But the rationing must be done beforehand. It is no good issuing a loan for £2,000 millions and expecting the public to be induced by mere exhortation to save that much money. If that is the policy, then all sorts of inflationary devices will have to be resorted to in order to get the full amount required. And so we come back to the fundamental reality of war finance—that the real economic necessity of war is to reduce consumption and that if a financial device appears to dodge that issue it is *ipso facto* suspect. If the genuine savings of the people are to be increased by the reduction of consumption, the reduction must be done compulsorily. There is a virtue in rationing for its own sake. And for a long list of things, even rationing is too weak. The manufacture or sale of anything that can be done without should be entirely prohibited, just as soon as the labour or materials now used in its production are wanted for the war.

One word more should be added on the subject of borrowing. It stands to reason—or at least it should stand to reason—that the rate of interest at which the State borrows should be the lowest possible. This is necessary for three reasons. First, it makes an enormous difference to the future cost of the National Debt. In the last war the State borrowed about £7,000 millions. One per cent. per annum on that figure represents more than a shilling in the £ on, or off, the standard rate of income-tax; it is more than the entire yield of surtax, and nearly as much as the yield of death duties. Secondly, the cheap-money cure will be needed for the all-but-inevitable post-war depression. But cheap money will be impossible (as it was impossible in the years 1919–32) so long as there is a mass of 5 per cent. war debt overhanging the money market. And thirdly, the capitalist must not, any more than the soldier or the taxpayer, be allowed to derive an undue advantage from the service he renders the community.

By its technical management of the capital market and by the expectations it holds out to investors, the Treasury can do a great deal to control the rate of interest at which it borrows. In the last war it followed the mystical—and quite nonsensical—doctrine that the rate of interest should steadily rise, with the result that the war of 1914–18 became a Five Per Cent. War. This time, the first approach has been far more sensible. The rate of interest varies, at any time, with the length of period for which the Government is borrowing. If it promises to repay in three months—as in a Treasury Bill—it can raise money for a fraction of one per cent. If the loan is to stand for several decades, the rate will have to be much higher. The first War Loan issued in March 1940 was for fifteen to nineteen years, and it bore interest at 3 per cent. The Chancellor of the Exchequer has stated that he does not intend to pay more than 3 per cent. for twenty-year loans and that he hopes to be able to get money for more than twenty years at the same rate. This war, in short, looks like becoming a Three Per Cent. War, to the great advantage of the community.

The brief examination of the three possible ways of financing a war, to which this and the previous chapter have been devoted, shows that they are unlikely, in practice, to be alternatives. If the Government is going to spend more than half of the total income of the community, it will have to lay its hands on resources by every means open to it. We shall have to have increased taxation and large-scale borrowing, and even so it is likely that there will still be a margin of expenditure that will have to be financed by inflation. But the foregoing discussion suggests that there should be a rough order of preference. We should first concentrate on raising taxation to the highest supportable level on rich and poor alike. We should then see what can be done by rationing to increase the genuine savings that can be borrowed. And only when we have exhausted these deliberate and scientifically planned devices should we turn to the haphazard, incalculable, and inequitable method of inflation.

Perhaps the whole sorry business will be easier to understand and tolerate if the central argument is borne in mind. It is not taxation, or borrowing, or inflation that creates the necessity for sacrifice by the common man. The blame for that must be put where it belongs—on those who started a war which, if we are to win it, must be fought on the maximum scale.

XI

THE EFFORT NEEDED

WE have now concluded our tour of the subdivisions of the main field of war economics and we can draw our conclusions together. At the end of Chapter I seven things that are chiefly needed for war were listed. Let us go over the list once again.

Man-power. After the collapse of France, we are necessarily left in an inferiority of man-power; but we can mitigate it by using our advantage of having more men and women out of every thousand to spare for war work. But we can only do so on two conditions—first, that we rigidly forswear the employment of labour for any but strictly necessary uses; and secondly, that we take steps to enrol the labour thus set free and to train it for its new tasks.

Materials. Germany is short, or will become short, of several of the vital materials of war. The blockade is not likely to force her to sue for peace, but it will set limits to her war effort and undermine her resistance to our onslaught. With one or two exceptions—of which timber and flax are the chief—we have access to ample supplies of all the necessary materials, provided we can pay for them and carry them.

Foreign Currency and Ships. Our power to draw on the resources of the outside world is not unlimited.

We shall not be able to pay for much more than our pre-war imports; we shall not be able to carry quite so much, in weight. But these limitations can be held at bay if, on the one hand, we succeed in maintaining and increasing our export trade and, on the other, in making the best possible use of our shipping. By rigidly cutting down all imports that can possibly be dispensed with, we shall be able to bring in sufficient quantities of war materials to give us a crushing superiority over Germany.

Industrial Capacity. This has not had a chapter to itself. But it can be said very briefly that our own industrial capacity—that is, the number of skilled workers and machines—*plus* that considerable fraction of the industrial capacity of the United States that is being placed at our disposal, is not less than that of Germany. Of all peace-time industries, motor-car manufacture is perhaps closest to the sort of industry that is required in war. In 1937 Great Britain made 493,000 motor-cars and the British Dominions a further 207,000, against Germany's 338,000 and France's 200,000; the United States' production was 4,809,000. In other branches of the engineering industry the comparison is not so favourable; but in general our war effort need not be hampered by a deficiency of the usual elements of industrial capacity. The chief difficulty we shall have to face at home in this connexion is a shortage of machine tools—the automatic machinery much used in engineering—which we have hitherto imported from the United

States and Germany herself. But we have the great advantage that we can import not only raw materials but finished munitions—provided we can fit them into our import programme. As all the world knows, we are buying American aircraft already and shall doubtless buy other things in due course. Germany's industrial capacity has to compete not merely with those of Great Britain and the Dominions but also with that great and growing part of the industrial machine of the United States that is working on Allied orders. There is no question where the balance of advantage lies in this comparison.

Food. British consumption of food will have to be cut down, but there is no reason to believe that any of the necessary constituents of a balanced diet will be missing or that anybody will starve. In Germany, on the other hand, there will be growing shortages of many essential foodstuffs and the quality of the food consumed will progressively deteriorate, even if its quantity never reaches the starvation point.

Money is not a weapon for winning the war, but for sharing its burden and diminishing its repercussions. The fact that the Nazis have pursued their ends more logically and ruthlessly than we have is thus a tribute to their thoroughness, but no assistance to them in winning the war.

Link by link the chain has been tested, and link by link we have found no fatal weaknesses in our economic strength-in-war. On the contrary, in many respects we are stronger than the Nazis by ourselves, and in all respects American aid would make us very much stronger.

Does this mean that we shall win the war? No.

Does it mean that we *can* win the war? Yes.

But there are severe conditions. Under every head we have to do something difficult and unpleasant. Man-power must be stringently combed out of every unnecessary use. Industry must cut down its production for the home market and turn over to the unaccustomed and perhaps unwelcome business of making munitions or export goods. Food consumption must be restricted; luxuries must be abandoned; all the pleasant things of life must be put aside until peace returns. Above all, we must have careful and constructive planning of the whole effort. A weakness in one sphere could hold up the whole structure. If ships are lacking, then man-power in Great Britain cannot be married with the world's materials. If foreign currency is lacking, then the ships will run empty. If man-power is not mobilized, then the materials will stack up in the ports. Everything must move forward together in one gigantic, co-ordinated effort.

The task has a double aspect. First we must move quickly and effectively to build up our armies and our still more gigantic war industries, and we must be quite unsparing to the preferences of individuals in doing so. It will need bold planning, skilled execution, and hardness of heart. The other aspect is the sacrifice of pleasure and consumption that will have to be made by every member of the population. It goes without saying that it is an abuse and prostitution of an economic system that ought to be devoted to building up the standard of living to devote it thus to mere destruction. But that is what we must do if we want to win the war—to win so completely that we shall be able to build anew, and to win it so quickly that we shall still have other thoughts in our minds than vengeance and retribution.

EPILOGUE

AFTER THE WAR: PROSPERITY OR POVERTY?

THE burdens of the war would be easier to bear if we could have any assurance that after it is over we shall return to a tolerable life in which the standard of material comfort and welfare will not be far below that we left behind when we entered the war. But the prevailing habit of mind, as illustrated by the sayings of the great, seems to expect that we shall never again get back to pre-war standards. 'Another war in the West', said Lord Baldwin some years ago, 'will mean the end of civilization as we know it.' There will be some relaxation of burdens when the actual fighting is over—even the pessimists acknowledge that—but it will only be partial. If you ask them for evidence, they will say that the income tax went up in the last war from 1*s.* 2*d.* to 6*s.* in the £ and never came down farther than 4*s.* in the post-war era.

I believe these pessimistic ideas are wrong. I believe there will be just as much wealth for the community to share among its members as there is now—or more. But it will certainly be true that some individuals will be ruined—that is an unfortunate but inescapable consequence of the upheavals of war. It may even be true that whole classes of the population will suffer relative disadvantages. What follows in this chapter is concerned, in the main, with the community as a whole and its members on the average.

And everything that is said is based on one fundamental assumption—that we are victorious. We need have no illusions about our fate if the Nazis win. They have already shown in Poland and Czechoslovakia how they exploit conquered peoples. Our liquid reserves of gold and foreign assets would be taken away from us, our shipping confiscated, our factories stripped of any machinery that Germany wanted. It has been a principle of Britain's imperial rule that our colonies are not exploited for our exclusive benefit; others may share in their trade. But after Germany had taken charge of them, we may be sure that they would be reserved for her exclusive use, and we should suffer from the loss of our trade with them, which could not be replaced elsewhere. In general, we should be made the victims of the trade policy which Nazi Germany has perfected in the Balkans in recent years, by which she reaps the maximum, and her clients the minimum, of benefit. There can be little doubt that the British standard of living—which, on the eve of the war, was the highest in Europe and only just behind the highest in the world—would be severely reduced if the war ended in Hitler's triumph.

For evidence of what would happen after an Allied victory, we can start from what actually did happen after the war of 1914–18. The Allies did not then do to Germany what the Kaiser's Germany would have done to them—still less what the Nazis, with their much more intensively developed technique of extortion, would do to us now. True, there was a half-hearted attempt to exact tribute, in the form of Reparations, but it was wholly ineffective; in the post-war years more capital went into Germany than came out. The consequences of 1914–18 should give us some indication of what happens after a full-scale war to the standard of living both of the victorious countries and also of a defeated enemy who is not plundered but helped back to his feet. If there is any tendency for war to result in generation-long impoverishment, it should have shown itself after 1918. The First German War was no picnic. In sustained carnage and destruction it exceeded many times over anything that went before.

The best test of the material welfare of the British people before and after the last war is the National Income per head—that is, the value of the useful goods and services available for the average citizen. Some dislocation and impoverishment was only to be expected in the months immediately after the Armistice, before all the readjustments incidental to the demobilization of a huge army and an enormous munition industry could be carried through. Let us therefore select 1924, five years after the end of the actual fighting and a decade after its beginning, and see what had happened to the National Income per head in the interval. It is, of course, necessary to make allowance for any change in prices that had occurred in the interval—an income of £200 after the war would be no more in real worth than £100 before the war if the prices of everything that could be bought with it had meanwhile doubled. Mr. Colin Clark has made this allowance in his estimates;[1] he finds that the average income per worker in Great Britain was £112·5 in 1913, and £115·7 (valuing everything at 1913 prices) in 1924. In other words, there was virtually no change.

These figures do not, by themselves, prove that the war had brought no impoverishment in its train. For many decades previous to 1914 the National Income per head (expressed in real terms—that is, allowing for changes in prices) had been rising at an average rate of something like 10 per cent. a decade. If it stood still between 1913 and 1924, that would seem to indicate that the war had caused a *relative* loss; it had brought us, not impoverishment, but the loss of a decade's progress. To have established this would in itself have been a heavy blow to the pessimists' case.

It is possible, however, to go still farther. There was one significant change between 1913 and 1924 which is not allowed for in the figures of National Income per head. The average hours of work in British industry in the earlier year were well over fifty a week. Immediately after the end of the war there was a very widespread movement to reduce hours, with the result that by 1924 the average was certainly not more than forty-eight and possibly less. Instead of material income going up by 10 per cent. in the decade 1913–1924, the average amount of labour came *down* by approximately the same amount. The British people chose to take the decade's increment of progress in the shape of leisure rather than of income. The figure we need to make a fully fair comparison is the amount of goods and services accruing to the average man (who includes the unemployed) for every hour's work done in the community. This also has been calculated by Mr.

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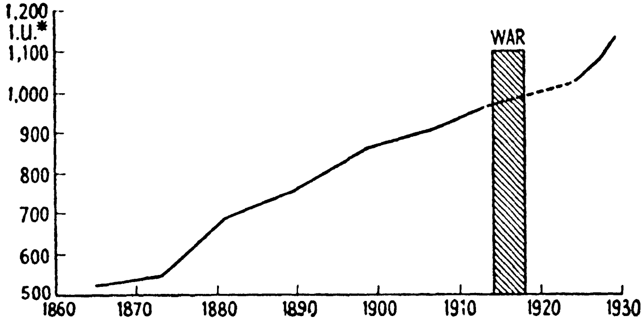
[1] Clark, *National Income and Outlay*. This reference is to estimates of 'net income per occupied person'.



Real National Income per head, allowing for changes in hours of work, Great Britain

* International Units—for a definition of the term see Mr. Clark's book, page 39.

Clark[1] and his results have been used in drawing the diagram that appears on the previous page. The line in the diagram is as good a measure as can be invented of what is meant by the man in the street when he talks about 'the standard of living', since it includes both income and leisure. It has been drawn to cover a period of nearly seventy years, so that any effect of the war could be seen in relation to the normal trend before and since. Actually, however, very little effect is to be seen. If we had figures for the actual war years, the line would doubtless dip downwards. But five years after the Armistice the line begins again just about where it could have been expected to be if there had been no war. A very slight slowing-down is perhaps perceptible, but that is all. In short, the material welfare of the people of Great Britain (if the phrase is extended to cover their voluntary leisure) was not merely as high in 1924 as in 1913, it was some 6 per cent. higher. If there had been any impoverishment of the community as a result of the war, it was too small to be noticed.

This is a very remarkable result, which some people will have difficulty in accepting. One obvious objection is that it applies to a country that suffered none of the destruction and devastation of war. Let us therefore take the case of France, many of whose richest and most productive districts were devastated in a way to which history has no parallel. According to Mr. Colin Clark's calculations, the real income obtainable in France for an hour's labour was 7 per cent. higher in 1924 than in 1913. If this calculation is too recondite, the proof can be given in another way. By 1925 France was producing 12½ per cent. more coal, 13½ per cent. more iron ore, 28 per cent. more pig iron, and 20 per cent. more steel, and she had 28½ per cent. more cotton spindles than in the same territory before the war. Production, it is true, is not the same thing as consumption. But if France's power to produce these basic necessities of an industrial age had increased so considerably, that is strong prima-facie evidence of an increase in the general standard of living.

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[1] Colin Clark, *The Conditions of Economic Progress* (Macmillan), Chapter iv.

Both Britain and France, however, were victors. How did the vanquished fare? In Germany's case there is a complicating factor, for five years after the end of the war came the great inflation, which wiped out more individual fortunes and possibly caused more individual distress than the war itself, and although an inflation destroys no existing material wealth, the dislocations it brings about undoubtedly interfere, at least for a time, with the ability to create new wealth. What the figures record, therefore, is the combined result of unsuccessful war and of inflation. Let us, therefore, allow a longer period for recuperation, and take the year 1929. The evidence is conflicting. The American Professor, J. W. Angell[1], thought at the time that the

[1] J. W. Angell. *The Recovery of Germany* (1929), Yale University Press.

real income per head of Germany was 15½ per cent. higher in 1929 than in 1913. Mr. Colin Clark, in the estimates to which reference has been made in the cases of Britain and France, found that real income per head, after adjusting the changes in hours of work, was about 10 per cent. lower. But in any case it is clear that there was no catastrophic fall, in spite of defeat and inflation.

War, then, apparently does not necessarily leave behind it a legacy of permanent impoverishment. This is, after all, not a very surprising conclusion, which might indeed be expected to follow from what has been said in earlier chapters about the nature of war economics. We cannot, during the war, put more than a very small fraction of the burden of it on to the future; and consequently, the future has only a very small part of the burden to bear. The enlarged totals of the National Debt and the taxation to which they give rise are only apparent burdens, for the money collected to pay interest on the debt is paid out to somebody; it is not a burden on the community as a whole (unless, of course, it is paid to foreigners). War *uses* the productive power of the community, so long as it lasts, for purposes that add nothing to the citizen's income or welfare; but it does not usually *destroy* that productive power. The steel mills and engineering shops now busy making guns and shells will be available after the war to make motor-cars and pleasure liners. What gives a modern community its power to give its citizens a high material income is the amount of productive capital it possesses—the number of horse-power available to supplement each pair of hands. It is only if this productive capital is destroyed and not replaced that the post-war power to produce (which, of course, limits the power to consume) will be affected. In the last war the productive capital of the belligerents was little affected—even in devastated France the damage was no more than could be put right by a few years' hard work, as the figures of production already quoted prove. In this war there is the possibility of damage by air-raiding. It is a moot point, which has not been decided as these lines are written (but may be by the time they are read), how great is the power of an air-raid to frighten the people and destroy their homes. But it is very unlikely that it could do very serious damage to the productive equipment of a country—its factories, mines, railways, ports, &c.—for the simple reason that the amount of space occupied by this equipment is an infinitesimal fraction of the whole. The bomber would be very lucky indeed if one bomb in a thousand fell on a piece of productive capital. If a dwelling-house is destroyed that is a pity and a loss to the nation. But the nation's power to produce wealth is not impaired; it is only when a factory, or a power plant, or a railway is destroyed that productive capacity is affected. The point may perhaps be made clearer by an analogy. If a skilled carpenter is robbed of his savings, that is unquestionably a loss to him, but it does not affect the wages he can earn in the future in the same way as would the loss of his right arm, or the theft of irreplaceable tools. Air bombing, then, may do a great deal of damage; but it is unlikely to affect our main conclusion that war does not greatly reduce a modern community's ability to produce wealth.

The evidence is, in fact, that the bulk of the permanent economic damage done by war results not from the destruction of the actual fighting but from the social dislocations that are its by-products. Two of these by-products are particularly harmful or potentially disturbing: the growth of unemployment and the redistribution of income between different classes of people.

That war gives rise to unemployment is obvious enough. It could hardly be expected that millions of men and women should be taken away from their normal avocations in order to be set to the purposes of war and then left to find their way back without some unemployment resulting. But we in Great Britain, who have had a more or less severe unemployment problem on our hands since 1921, are inclined to over-estimate both the inevitability of heavy post-war unemployment and also its damaging effect. Though every other country had an unemployment problem to cope with at some time in the immediately post-war years, none of them had continuous unemployment as we did. There were, in fact, two special reasons why Great Britain suffered so badly from post-war unemployment—reasons which will not, or at least need not, recur after the present war. The first was the fact that we suffered very severely from the post-war restriction of international trade; as the greatest trading nation we had the most to lose, and it is a commonplace that the worst and most persistent unemployment in the twenty years between the wars was in the export trades. Since international trade has already been reduced to a figure much nearer the indispensable minimum, and since the export trades are now a very much smaller proportion of our total industry than they were in 1913, it is unlikely that we shall suffer so severely from this cause again. Secondly, we created a lot of unnecessary trouble for ourselves in the 1920's by our efforts to raise the value of the pound sterling so that it could 'look the dollar in the face' again (i.e. so that it could look four-dollars-and-eighty-six-cents in the face again), a policy which prevented us from enjoying the employment-creating benefits of cheap money until 1932.

On the whole, then, while agreeing that unemployment is a large entry on the debit side of the balance-sheet of the effects of war, there is reason for believing that, in this respect at least, we shall escape more lightly this time than last. Moreover, the effects of unemployment should be properly grasped. It does not prevent the income of the whole community from rising, as has been indicated by the figures quoted earlier. It does not prevent the income of the whole working-class from rising, as could easily be proved. Its effect is to bring about an unfair distribution of income between different members of the working-class, between the employed and the unemployed. We must not underrate the inequities and the misery it causes; but we should also not overrate its power to impoverish the community as a whole.

The other great dislocation produced by war is the disturbance of relations between and within different classes of Society. This is less the effect of war itself than of the way in which it is financed; specifically it is the effect of large-scale borrowing, and most especially of inflation. Every belligerent country was left by the last war with a price-level substantially higher than it had been before the war. In England and America, the post-war level was about 50 per cent. higher than the pre-war; in France it was about five times as high; in Germany it was a million million times as high. Obviously, anybody whose income was fixed, or difficult to move, in terms of money, suffered from this change. Owners of fixed interest securities, pensioners, landowners (except where they could raise their rents), and many persons remunerated by fixed salaries made up the New Poor. Moreover, the war left behind it not only a higher level of prices but a higher level of taxation, partly to pay for the increased National Debt, partly to pay for the new social services. A man who had an income from

Consols of £1,000 before the war paid income tax of £58 on it, leaving £942 for his expenditure. In 1923 his income tax had gone up to £169 and the balance of £831 was, because of the rise in the cost of living, worth only as much as £450 in 1913. His standard of living, in fact, had been reduced by 52 per cent.

There were corresponding gains to other classes. Wage-earners gained, their material incomes going up and their hours of work going down. But though the poorer people thus gained, it would be a mistake to say that the rich, as such, suffered. *Some* of the rich suffered—those whose incomes were fixed in money. But others of the rich suffered very little—those whose incomes depended on fluctuating profits. And a whole new class of rich arose from the profits of the war itself. As for the middle class, their experience was much the same. Some of them undoubtedly suffered, especially those who lived on inherited wealth. But the salary-earning and professional people had a higher standard of living after than before the war, as witness the enormous growth of the expensive pastime of motoring, the rapid spread of the boarding-school habit, and the very extensive building of middle-class homes. Thus to say that the rich suffered and the poor gained is only a very inadequate first approximation. It was the earners of wages, salaries, and profits who, by and large, gained, and the *rentiers*, the landowners, and the pensioners who suffered. There is, it is true, a higher proportion of this latter class among the rich than among the poor.

These shifts in income in England could hardly be regarded as disastrous (though, incidentally, they largely account for the general impression that the country was poorer after the war than before, since those who lost were very vocal, while those who gained were probably unaware of the fact). But in France, where the process of inflation went much farther than in England, the social disturbances were a factor to be reckoned with, while in Germany, the impoverishment of whole classes of people by the inflation was one of the major causes of the Nazi revolution.

The dislocations that follow on war and its financing can therefore be severe and dangerous. We should be unwise if we underrated them. But they should not be confused with impoverishment. The world after the war of 1914–18 was a less stable and less secure place, and there were minorities, whether of unemployed or of New Poor, whose economic position was definitely worse than before the war. But it was not on balance a poorer world. To predict the future is hazardous; but the evidence is that history will broadly repeat itself.

This is a conclusion of some value. For if victory would merely bring destitution and poverty, we might legitimately ask ourselves whether it is worth the struggle. Unless we are fighting for something, we are merely following our bellicose instincts, with no more purpose or direction than the fighting cock. But if the argument presented here is sound, we have something to fight for. In the war of 1914–18 people buoyed up their hopes by saying they were fighting to create a better world. It is the fashion nowadays to be cynical at the expense of the high hopes of those days, and perhaps it is too much to hope that bloodshed and destruction can lead to any positive improvement. But they can protect what we have got—they did so last time and they can do so again. We may not have more liberty and democracy as the result of the war, but at least we can hope to preserve the liberty and democracy we have already achieved—which would certainly have been lost if we had not taken up the challenge of Hitlerism and will be lost if we do not crush it. Similarly, in the economic sphere, which is the special province of this book, we cannot pretend to be making the world any richer by fighting a war; but there is good reason to believe that we are not making it any poorer. If we can maintain our present capacity to produce wealth and at the same time ensure that the wealth produced is used to increase the welfare of the common man rather than the power of some military tyrant (for that is the difference between the economics of a democracy and of a dictatorship)—then we surely have an economic war aim great enough to repay the bearing of the heavy burdens of the economic war.